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Gardening with Free-Range Chickens

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- Raise plants beneficial to you and your chickens
- Manage pests and predators

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Popular Garden Writer & Speaker

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by Bonnie Jo Manion and Rob Ludlow

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Bonnie Jo Manion is a garden writer, speaker, and photographer out of coastal North San Diego County. She has been combining her love of gardening and her joy for chickens for more than a decade.

Influenced by her travels and time spent living abroad, she embodies a unique Southern France twist on the Southern California lifestyle through artful seasonal living in her cooking, gardening, and writing.

Bonnie and her husband, John, transformed what once was a neglected acre of land into a beautiful and bountiful petite Provence, complete with a flock of spoiled chickens, an orchard, a potager, a vineyard, and award-winning wines.

Bonnie has been featured in national garden magazines for her gardens, organic practices, chickens, and vintage container designs. Follow Bonnie at her garden lifestyle blog, www.VintageGardenGal.com.

Bonnie has an Avian Science B.S. degree from Colorado State University and is the Southern California Regional Garden Contributor for Lowe.com/SoCal.

Rob Ludlow, his wife Emily, and their two wonderful daughters Alana and April are the perfect example of the suburban family with a small garden and flock of backyard chickens. Combining gardening and raising chickens seemed to be a natural and perfect idea!

Rob owns and manages www.BackYardChickens.com (BYC), the largest and fastest growing community of chicken enthusiasts in the world. His love of gardening also inspired him to create www.TheEasyGarden.com to share his passion and love of gardening with others.

Rob is the coauthor of the books *Raising Chickens For Dummies*, *Building Chicken Coops For Dummies*, and *Chicken Health For Dummies*.

Dedication

From Bonnie: To my loving husband, John, who knows, “Which came first, the chickens or the vines?”

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Introduction

Our calculated guess is that chickens may realistically be a country's third most popular pet today after dogs and cats. The U.S. Department of Agriculture doesn't keep track of the number of hobbyists who raise chickens in their backyards, gardens, or personal properties. We do know that the popularity of raising chickens close to home keeps on trending upward. Certainly both of our lives have been changed significantly by raising our chickens.

Part of the popularity of raising chickens is fueled by the intense interest in raising your own food, eating seasonally, and creating a more sustainable home for yourself, and ultimately for the planet.

This trend and keen interest in raising chickens touches people in many ways. It's a winning combination of people's love of pets, companionship, nurturing a life; food sustainability; and more; combined with reasons why people garden, once again for self-sufficiency, health, quality of product, feeling productive, and going back to your roots or a simpler time.

You can enjoy chickens no matter where you call home, whether it's an urban, suburban, or rural setting. Chicken enthusiasts want to garden with their chickens, allow them to forage at will, and appreciate all the goodness chickens give back in return.

We hope that you find this book helpful, creative in new ideas, and resourceful for companion gardening with chickens. We welcome you to the joy of chickens.

About This Book

Our intention in writing this book is to share with you how easy it is to garden with chickens. *Gardening with Free-Range Chickens For Dummies* provides garden basics and chicken essentials necessary to have a vibrant, thriving garden that flourishes with happy, healthy, and productive chickens.

Chickens and gardens are a natural complement, and the transition is easy if you've only gardened and never raised chickens, or only raised chickens and now want to venture into creating a dreamy chicken garden. Perhaps you've

tried doing both, and the experience wasn't successful. We provide management tips, suggestions, proven methods, and concepts on everything from plant information to fancy chicken breeds. This book is a guide to help you effectively balance free-ranging chickens in your world.

Conventions Used in This Book

Conventions are certain standard techniques that are used in a book like this one. For example, throughout the book, we use the following conventions:

- ✓ *Italics* emphasize an important point.
- ✓ **Bold** text is used when new terminology is presented.
- ✓ Bullet points (such as this one!) indicate that a couple points are related to a certain subject. This convention makes it easy to visually separate different aspects of the same conversation.

What You're Not to Read

Throughout this book, jump in and read about any subject you like. If you aren't planning to read everything, know that text marked with the Technical Stuff icon is optional. In those cases, we've simply provided more technical information that's interesting, but you can still understand the subject at hand without it. Sidebars (the text in those gray shaded boxes) are more optional reading. Sidebars are asides for more information relating to an immediate subject from a slightly different slant.

Foolish Assumptions

In writing this book, we took the liberty of making some assumptions about you; these assumptions helped us decide how best to present our information to you. See if one of these assumptions describes you:

- ✓ You're entirely new to raising chickens. Although this book covers the basics of raising chickens, it isn't the bible on the subject. A great complementary book to this one is *Raising Chickens For Dummies* by Kimberley Willis with Rob Ludlow (Wiley).
- ✓ You're a veteran at raising chickens, but you want to know more about how to effectively free-range chickens in your own setting.

- ✓ You're knowledgeable about chickens but not gardening. You've been bitten by the gardening bug. You want to know the basics of creating and maintaining a garden.
- ✓ You have chickens currently, and you want to practice more sustainable practices in your garden, and grow more edibles.

How This Book Is Organized

The body of this book is organized into three logical sections, Parts I, II, and III, which cover the three important themes of the book. Within each section, you find chapters that logically follow with more information on each subject. Each chapter is further broken down into main headings and sub-headings to help you locate ideas and concepts easily.

The last section, Part IV: The Part of Tens, is comprised of three shorter chapters with snippets of content and ideas at a glance. These chapters reinforce and encapsulate much of the information presented in the first three sections of the book. The following sections tell you more about each part.

Part I: Getting Started with Gardening and Chickens

Part I introduces you to the concept of gardening with chickens and tells you how the two complement one another. Chapter 1 introduces you to the world of gardening with free-range chickens and what benefits await you. Chapter 2 details how to prepare your garden for a proper environment for chickens. Chapter 3 outlines and helps you prepare yourself and your family for what to expect when raising chickens in your setting. Chapter 4 helps you assess your present property and which variations of free-ranging chickens will work best for you.

Part II: Designing a Chicken-Friendly Garden

Part II focuses on garden basics, which include landscape materials in Chapter 5, garden to pasture plant ideas in Chapter 6, and growing edibles for yourself and your chickens in Chapter 7. Part II helps you create a healthy garden for you and your chickens.

Part III: Chicken Care: Tending to Your Flock

Part III is all about effective methods and management of your chickens. Chapter 9 highlights chicken behavior and training, and how to handle changes in a flock. Chapter 10 tackles the heartaches — including predators, disease, parasites, old age, and the death of your chickens.

Part IV: The Part of Tens

Part IV, the important ending section of every *For Dummies* book, lists ten common chicken problems (and their solutions), ten beneficial tools for raising chickens, and ten fun ways to get fancy with chickens.

Icons Used in This Book

Icons are special symbols that are part of the *For Dummies* format. These symbols are set in the margin near paragraphs of text in the book. They're designed to catch your attention and to emphasize certain information. This book uses the following icons:



Tips are fruitful pieces of information. They flow from our many years of experience raising chickens and gardening.



This icon has critical information for you to read and retain.



This serious icon cautions you about something that's critical, potentially harmful, or dangerous.



This icon includes optional technical information for your reference. You can choose to skip these paragraphs if you like, without missing any important information.

Where to Go from Here

The content in this book has a logical flow to it, from Chapter 1 all the way through to Chapter 10. However, each chapter stands alone, so you're welcome to begin anywhere you like in the book.

If you're currently dealing with a predator attacking your chickens, start with Chapter 10, which covers different predators and highlights specialty fencing for predators.

If you've never raised chickens before, and don't know what's involved, go to Chapter 3. In Chapter 3 we carefully list the responsibilities — and time — involved in caring for your chickens.

If you think you want to redesign your garden, and add chickens as one of the components, Chapter 1 explains sustainability and composting. Then flip to Chapters 5 and 6 for materials, garden structure, and plants for purpose.

If your whole motivation for getting chickens is for your children, Chapter 2 highlights the breeds best for children, and Chapter 3 discusses the life lessons chickens can teach children.

No matter where you choose to begin, we hope you enjoy the journey and find the material beneficial for whatever your gardening and chicken needs may be.

Part I

Getting Started with Gardening and Chickens

getting started
with
**gardening
and
chickens**



Visit www.dummies.com for great *For Dummies* content online.

In this part . . .

- ✓ We introduce you to the world of gardening with free-range chickens and show just how beneficial chickens can be to your life and your garden.
- ✓ Get important information on finding a flock that fits your needs: how many chickens should you have, what breeds will work best for your garden style, how much space will your chickens require?
- ✓ We help you and your family prepare for the changes that owning chickens brings. Whether you already have chickens or are thinking of adding chickens to your garden, we provide helpful hints on raising chickens with children, introducing your family pets to chickens, and keeping good relations with your neighbors.
- ✓ Learn how to change a dog kennel into a chicken coop and other ideas for repurposing existing structures into chicken-friendly places.

Chapter 1

Joining Forces: Companion Gardening with Chickens

In This Chapter

- ▶ Adding another dimension to your garden with chickens
 - ▶ Creating sustainability in your own garden
 - ▶ Introducing variations of free-ranging chickens
 - ▶ Enjoying incredible fresh eggs as a food source
-

Gardening has so many benefits: bringing beauty to your space, giving yourself a chance to grow your own healthy foods, introducing a “green” way of living to your family, helping the environment through composting, and many, many more. When you add free-ranging chickens to the mix, you really amp up the value of your garden space and what you can do for yourself, your family, and your environment. It’s amazing what your garden can do for chickens and what chickens can do for your garden!

Gardening with Free-Range Chickens For Dummies is a guide to help you manage chickens in your garden. We cover the basics of raising chickens, as it relates to gardening with free-range chickens. For more in-depth information on backyard chickens, check out *Raising Chickens For Dummies* by Kimberley Willis with Rob Ludlow (Wiley).

In this chapter, we cover how owning chickens has risen in popularity and how it began. We also discuss the concept of free-ranging and how it works. From there, we move on to describing different types of chickens and how they can work in your garden. Lastly, we discuss creating a sustainable garden and how you can have fun with showing your personality through style and structures.

Getting Down to the Roots with Keeping Chickens

To move forward, it helps to look to the past. Gardening has evolved quite a bit over the years. And, from modern gardening, the addition of backyard chickens has come to the mainstream.

Looking at the evolution of gardening

Nearly four decades ago, a quiet “fresh local food” movement began in the U.S., and this food movement is still going strong today. Alice Waters opened her groundbreaking Berkeley, California restaurant, Chez Panisse, and heralded growing your own food, eating seasonal food grown locally, and educating school children about fresh food by creating school gardens. In that same time frame, also out of the Bay Area, Rosalind Creasy pioneered mixing flowers and vegetables and called her philosophy edible landscaping. She taught people to exchange water-thirsty front lawns for beautiful landscapes of fruits and vegetables.

In the past decade, food writers like Michael Pollan, author of *The Omnivore’s Dilemma* (Penguin), and others have graphically written on the dangers of how much your food has been industrialized and its impact on the environment, as well as the impact on nutrition in the typical Western diet.

In 1986, the “slow food movement” began in Italy, as an alternative to fast food and a goal of championing local agriculture and a return to artisanal food. Now, globally it has 100,000 members in more than 100 countries. Its goals are sustainable foods and the promotion of people and businesses involved in local food — such as chefs, restaurateurs, and local farmers producing quality artisan foods that are highly praised for their unsurpassed flavor and breadth of satisfaction. It strives to preserve traditional and regional cuisines, and promotes local farming and agriculture that’s part of the local ecosystem.

Today community gardens are just as popular as the necessary “Victory Gardens” were during the years through World War I and II, in the United States and in many other countries. During war times, the U.S. government asked private citizens to grow their own food at private homes and public parks for the purpose of easing the food shortages and rationing brought on by the war effort. See Figure 1-1 for an example of how Americans were asked to help.

Figure 1-1:
A news-
paper ad
asking
people to
help the
war effort
by raising
chickens.

**Uncle Sam Expects You
To Keep Hens and Raise Chickens**



**Two Hens in the Back Yard for Each Person
in the House Will Keep a Family
In Fresh Eggs**

EVEN the smallest back yard has room for a flock large enough to supply the house with eggs. The cost of maintaining such a flock is small. Table and kitchen waste provide much of the feed for the hens. They require little attention—only a few minutes a day.

An interested child, old enough to take a little responsibility, can care for a few fowls as well as a grown person.

Every back yard in the United States should contribute its share to a bumper crop of poultry and eggs in 1918.

**In Time of Peace a Profitable Recreation
In Time of War a Patriotic Duty**

For information about methods of Back-Yard Poultry Keeping suited to your location and conditions, write

**Your State Agricultural College
or
The United States Department of Agriculture
Washington, D. C.**

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Now, it isn't uncommon to see abandoned vacant city lots transformed into urban "Gardens of Eden" by willing community residents. There's something empowering about working together for a common goal, and sharing the abundant fruits of your labor, as these community gardens demonstrate. For more information about community gardens in your area, contact the American Community Gardening Association at <http://www.communitygarden.org>.

Taking a cue from Alice Waters, schoolyard vegetable gardens are prevalent in our school systems today. Children learn how to grow their own food in these school gardens which have become living classrooms. Their enthusiasm for gardening, often spills over exuberantly to do more in their own backyard.

Today, families like the satisfaction of growing their own food, having control of how their food is raised, and the unsurpassable quality seasonal fresh food tastes from their garden.

Working toward growing your own food

As a nation, the U.S. has been influenced and educated over time by this local fresh food movement. Today many people want to have their own vegetable gardens, and grow their own food in their own backyards. In doing so, you have the capability to really make a difference for the environment and ultimately the planet.

If you grow your own food, you save energy on freight and transportation costs, save wildlife habitats by not having to clear the land and use it for agriculture, send less plastic packaging materials into landfills, have control of chemicals and pesticides used in your food, have freedom to grow “nearly lost” heirloom edibles and raise endangered poultry breeds for future generations, and lastly enjoy fresh seasonal food that abounds with incredible wholesome flavor and health for your bodies. Growing your own food has become very popular for all these reasons. Raising chickens in your own garden and property is the next easy step if you want more.

Checking on the trend of owning chickens

Free-ranging chickens isn’t a new concept. At the turn of the 20th century, most poultry was raised on small family farms. Farm flocks were small, letting the hens fend for themselves through foraging, and supplemented with a little grain and kitchen scraps. Eggs were the primary value, and meat was considered a secondary product. Roast chicken was the special Sunday dinner.

The concept of pasturing poultry, letting chickens free-range during the day, and prudently confining them in secure housing at night was prevalent. A faithful watchdog was another important element to guard the flock during the day.

This popular method of pasturing poultry, reached a peak in the U.S. from the 1930s through the 1960s. Farmers saw that free-ranging poultry not only improved their soil, but also ultimately produced tastier eggs, as well as firm and better textured meats. In addition, it was humane treatment. Farmers often integrated pasturing poultry after other grazing livestock, such as cows, for managed grazing benefits.

In the 1950s, the trend began transitioning away from the family farms to industrialized, larger-scale, specialized operations that confined and housed chickens full time for greater production benefits. At this same time, the concept of raising chickens, called “broilers,” for meat production began. Broilers had the ability to grow to maturity very quickly, and be ready for the consumer market in an amazing 6-8 weeks time.

Today, having backyard chickens is incredibly popular, and in a way it’s reminiscent of nostalgic past times on the farm. You may be lucky enough to live

on a farm, but statistics currently indicate the majority of the U.S. population lives closer to cities and urban areas. Perhaps gardens and an interest in raising chickens are what helps keep people grounded to the land.

Chickens are a natural as garden companions because they help with garden chores such as weeding, eating insects, keeping a lawn mowed, and depositing fertilizer. If that is not enough, they have fun little engaging personalities, are very sociable, and provide us with protein-rich eggs.

Defining the Free-Range Concept

Many people are used to thinking of commercial chickens in cages, within enclosed buildings, under artificial lighting. Free-ranging chickens is a very different approach to raising chickens. Chickens by their very nature are foragers, and they're the happiest when they're able to eat their natural diet from their surrounding environment. *Free-range* is defined as keeping live-stock or poultry in conditions natural to them, with freedom of movement.

Chickens prefer to be on the move, looking for food, and exploring their immediate domain and what it has to offer. Chickens will never overeat, yet will eat all day, unless they're brooding, and unless it's night. Chickens don't eat in the dark. Chickens will free-range generally as a flock or a unit. This means that all your chickens generally forage together in close proximity of each other. For this reason, we recommend at least 250 to 300 square feet of space per bird.



Brooding is the hen's maternal instinct to remain in the nesting boxes, warming a clutch of eggs. If the eggs are fertile, the mother hen keeps the eggs warm with her body, allowing the embryos to develop and grow. In 21 days, chicks hatch out of their shells.

The process of free-ranging

Chickens in natural conditions forage for tender young succulent plant growth. Along the way they delight in finding bugs, insects, worms, and larvae. Chickens eat a wide range of foods such as plants, edibles, weeds, grass, berries, seeds, and more. Chickens can be a natural cog in the ecosystem wheel of your garden and landscape setting.



As an owner of your flock, it's up to you to be proactive in keeping your chickens safe from anything that could be harmful to them in your garden setting. A short list is hazardous materials, predators, pesticides, and known deadly poisonous plants.

Chickens need a habitat that is heavily layered with plants, that provide food, shelter, and protection, which essentially simulates their original jungle-like environment. With dense plantings and many layers in a garden, chickens will be occupied, happy, fed, and will be less likely to destroy your garden. They will also be sheltered and protected by plant density, and the many layers of a garden. In Chapter 6, we go into detail the many layers and suggested plant lists.

Chickens, no matter how endearing and fun they are to have in your garden, are essentially small livestock, and must be effectively managed like any other type of livestock if you intend to free-range them. See later in this section for the many different methods of free-ranging chickens to accommodate your lifestyle.



This book is based on providing information for free-ranging your chickens effectively. Chickens do very well, however, in a confinement setting, such as a well set-up chicken coop, and adjoining secure outside pen, giving them ample space and square footage per bird. We don't, however, recommend confining chickens in cages, otherwise you are raising chickens the same way they are raised in commercial poultry operations. Chickens are active, curious creatures. They prefer to have freedom of movement in seeking their natural diet, and their eggs will be tastier and healthier for you.

If you open your lush, beautiful gardens every year to be on a garden tour, you may not want to give your chickens free rein of the garden. If your property butts up next to a wilderness area, perhaps the predator risk is too high, and you'll want to have your chickens restricted to their coop and a totally enclosed secure outside pen. Maybe you have a homestead farm, and you plan on rotating your chicken flock in multiple pastures. No matter what your setting or situation is raising chickens, you have a variety of methods to choose from.

There are many variables to consider in laying out your land for some form of free-ranging chickens:

- ✓ The size and design of your property and garden.
- ✓ The type of plants and landscape growing in it.
- ✓ How your property is maintained and managed.
- ✓ Balancing your flock size with your allotted space. Always check your city/county zoning for flock size stipulations. See Chapter 3 for details.
- ✓ How you manage your chicken flock with your lifestyle.
- ✓ How much dedicated time will your chickens be allowed to forage for themselves.

Free-range methods to choose from

Here are our suggested free-ranging chicken methods. We caution you that free-range means different things to different people, and in different parts of the country, and the world. We define free-range chickens as allowing chickens to access their outdoors freely with sun, soil, and with the ability to forage freely for their natural diet in a sheltered and protected plant landscape. Free-range can be categorized into two basic categories, free-range and confined free-range.

Free-range

Here are two main types of free-ranging:

- ✓ Free-range in the garden all the time. Chickens spent most of their entire day in a dense, well-layered garden. They return each night to their chicken coop, and are securely locked in and protected for the night. See Chapter 4, for more details and illustrations of non-layered and well-layered landscapes.
- ✓ Free-range in the garden part time. Same as above on a part time basis, or weekends.

Confine-range

For most of us, a managed confined-range method works best for the health and well-being of our chickens, yet lets us as gardeners manage our chickens effectively, and in balance with our gardens. Here is our list of confined-range methods for chickens. Your lifestyle and region you live in makes a huge difference in how to raise your chickens. See Chapter 3, for more information on how lifestyles and regional variables make a difference. See Chapter 4 for an in-depth look at the following types of confined free-ranging methods:

- ✓ Confined-range with rotating permanent runs or zones
- ✓ Confined-range with temporary runs
- ✓ Confined-range with mobile chicken coops
- ✓ Confined-range with mobile chicken tractors

These free-range and confined-range management methods for chickens, include lots of variations to adapt to your particular setting and your lifestyle.

There's No Beef About Chickens

When we speak of free-range chickens in the garden for this book, we're basically referring to raising chickens for egg-laying purposes. We may give tips or facts regarding other breeds from time to time. We go into more detail about the various breeds for planning your home flock in Chapter 2.

Keeping a backyard flock of chickens and free-ranging them in your garden are very rewarding. Doing so adds another dimension to your garden, another purpose, giving it a living pulse. Your flock helps your garden flourish by aerating and fertilizing your soil and acting as weed and pest police.

Chickens are adaptable and can live in urban, suburban, and rural areas with ease, provided you give them the essentials to be happy and enjoy their lives. They don't require much space. Chickens are brimming with personality and charming amusement, and they can quickly become endearing family pets.

In fact, chickens can easily become part of the family, just like the family dog or cat. When properly cared for, a chicken's average life span is usually five to seven years, although some have life expectancies of 12 to 15 years. Life expectancy varies within the different breeds, and their environment. Unfortunately, too often a predator's attack ends a healthy chicken's life.

It is important that you know how best to manage chickens, just like any other animal, bird, or living thing you may care for. Providing your free-range chickens with a bit of training, guidance, management, and attention to detail ensures a rewarding and beneficial experience for you both. (Check out Chapter 9 for more information.)

Our book is all about you too, the gardener, and the type of garden you have, or want to have. Chickens and gardens work well together, but there has to be some "give and take," and common sense management involved. Managing your flock in your garden is key to having a winning relationship with your chickens and a garden that flourishes.

Categorizing chicken breeds

Chicken breeds, like dog breeds, can be categorized by their different purposes serving humans. Dogs are bred for many purposes, such as physical abilities, appearance, temperament, and show. Chickens have been bred for many purposes, too. Sometimes these purposes overlap, as chicken dual-purpose breeds do. Here are some of the categories:

- ✓ **Dual-purpose breeds:** They have formidable egg-laying capabilities and heavy-breed configurations for meat consumption. They function well for both purposes. These are good breeds for free-ranging in your garden, and the majority of backyard flocks are made up of this group of breeds. These breeds can weigh six to eight pounds at maturity, and they aren't able to fly well. See Figure 1-2 for examples of these breeds.
- ✓ **Egg-laying breeds:** Most of these breeds are known for their prolific egg-laying capabilities: 250 to 300 eggs per year in their first one to three egg-laying years. See Figures 1-3, 1-4, and 1-5 for examples of popular egg-laying breeds.

Figure 1-2:
Common
dual-
purpose
breeds —
Barred Rock
(left) and
Wyandotte
(right).

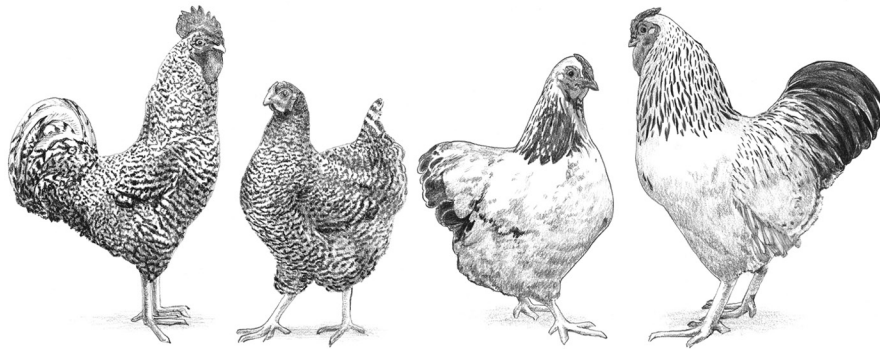


Figure 1-3:
Common
breeds that
lay white
eggs —
Minorca (far
left), white
Leghorn
(middle), and
Hamburg
(right).

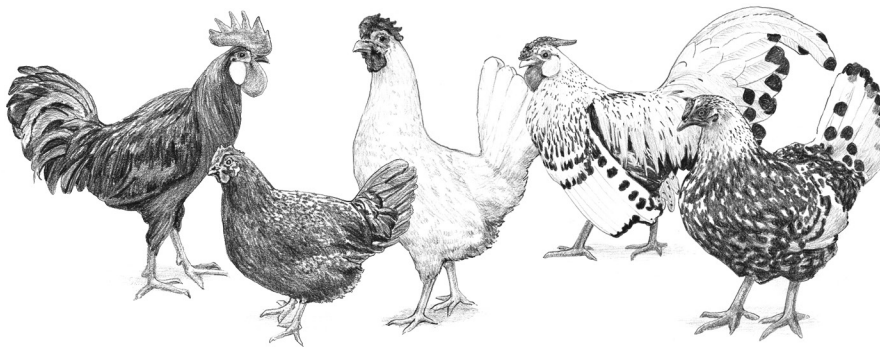


Figure 1-4:
Common
brown-
egg layer
breeds —
Australorp
(left) and
Rhode
Island Red
(right).

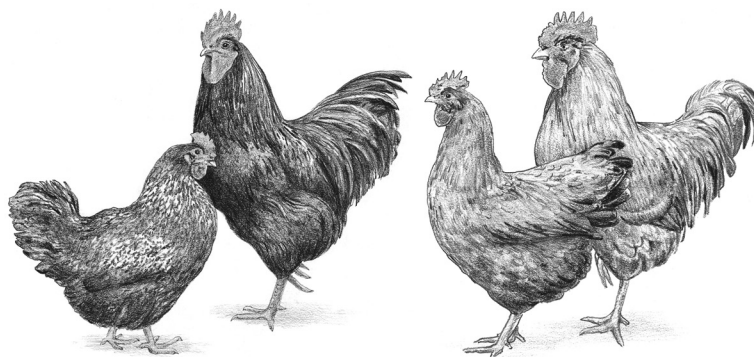
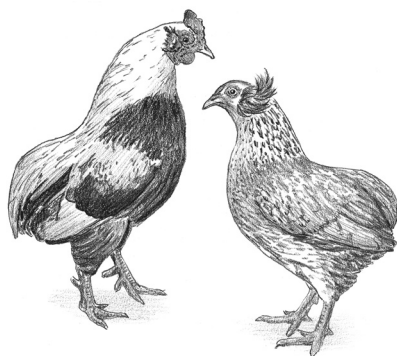
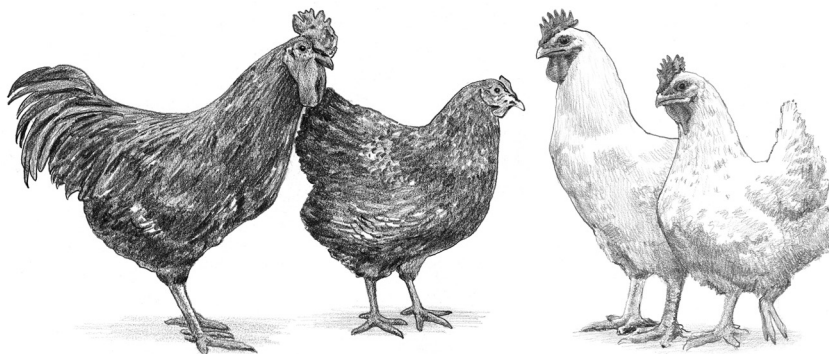


Figure 1-5:
Common
colored-
egg layer
breed —
Araucana.



✓ **Meat breeds:** Most meat breeds have been genetically bred. They have the propensity to grow quickly and with heavy-muscling. They fall short in egg-laying, and sometimes lose their capability to efficiently reproduce on their own. See Figure 1-6 for two popular meat breeds.

Figure 1-6:
Common
meat
breeds —
Jersey Giant
(left) and
Cornish X
Rock (right).



- ✓ **Show competition breeds:** These breeds are the ornamental breeds of the chicken world. Children gravitate to these breeds, drawn to their appearance and personalities. They aren't prolific layers, and they aren't best for eating. Figure 1-7 shows three examples.
- ✓ **Bantam breeds:** Bantam breeds are miniature chickens, usually three pounds and under. Almost all chicken breeds have a bantam size and a standard size. If a breed has only a bantam size, it's considered a true bantam. Bantams are perfect for urban environments, because they require less space. Look at Figure 1-8 for breed examples.

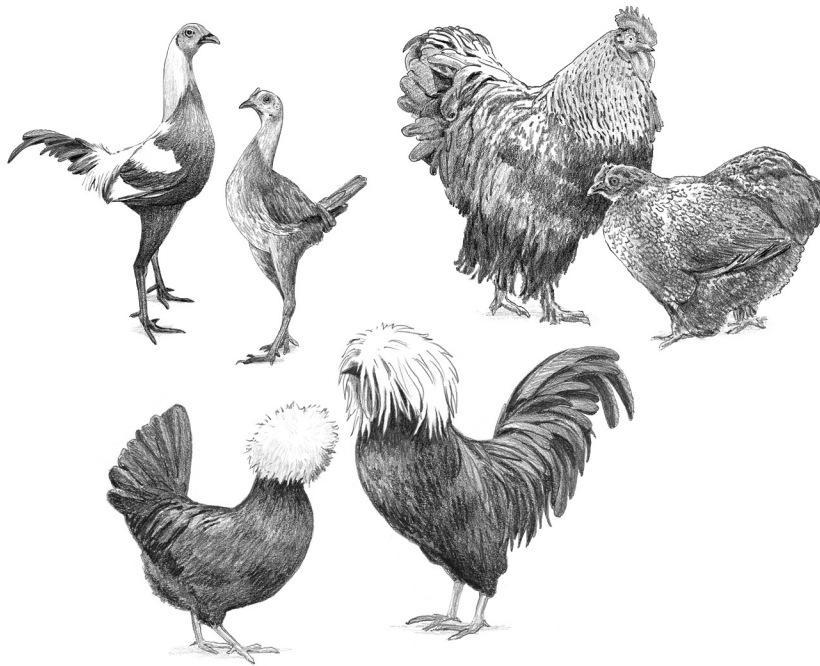


Figure 1-7:
Common
show
and pet
breeds —
Old English
Game (top
left), Cochin
(top right),
and Polish
(bottom).

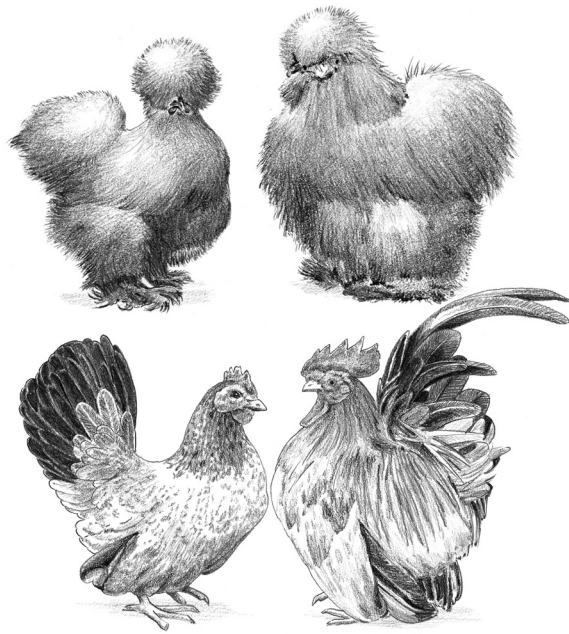


Figure 1-8:
True
bantams —
the Silky
(top) and the
Japanese
bantam
(bottom).

Helping gardens to flourish



Chickens are small, adaptable livestock. Chickens leave a small imprint in most gardens, yet they do a big job of benefiting a garden. Balance is key, and your flock size to your garden size must be a healthy ratio for both to thrive. This is the most important factor when adding chickens to your garden or landscape.

Factors that contribute to the amount of space required for a healthy balance of chickens in your garden include the following:

- ✓ Your climate
- ✓ The time of year and season
- ✓ The breed and age of your chickens
- ✓ The quality and condition of your garden or area where you're free-ranging the chickens
- ✓ Is your garden new or mature, established with lots of trees and shrubs that provide important shelter and protection for your chickens

Your garden creates a healthy habitat for chickens to thrive and live well, and in return they keep your garden healthy and provide a sustainable food source.

Chickens roam about the garden minding their own business, fitting into the general landscape, rather than being intrusive. However, if you're in the garden, they're likely to forage near you, because they're always curious and social. Most chicken breeds are stunning in appearance, and the general nature of happy, clucking, cooing chickens makes for a pleasant atmosphere.

Chickens are great diggers and scratchers, which means they're constantly aerating your garden throughout the day with their strong legs and long toenails that dig deep into the dirt. Chickens naturally aerate, or introduce life-giving oxygen into the soil around plants. This digging and scratching naturally benefits the soil, and in turn benefits the plants close by.

Chickens as pest and weed police

Chickens naturally feed on insects and are an organic form of pest control in your garden. Chickens eat pests not always easily seen. Over time, you may notice that you have fewer spiders, or earwigs, and it could be your flock in the garden taking care of business.

Chickens can eat potentially dangerous spiders in your garden, like black widow spiders and brown recluse spiders, and it won't harm them. In fact, they turn the protein from the spiders into delicious eggs — one of the best recycling programs ever.

Chickens love their proteins. They love insects of all kinds, such as sow bugs, ants, earwigs, flies, mosquitoes, spiders, termites, and grasshoppers. They're equally agile at eating tomato worms, larvae of all types, worms, and grubs that frequent a compost pile.

Moving up the food chain, chickens will eat small lizards, baby snakes, and even mice. We have seen chickens eat mice several times, especially if the mice are trapped inside a chicken coop or secure outside pen. Mice are gulped whole by a chicken and quickly passed to an expandable sack called a *crop* where digestive enzymes begin to soften the food and further prepare it for digestion.



Contrary to popular belief, snails and slugs aren't a favorite food of chickens. Snails and slugs can act as intermediaries for parasites such as gapeworms, which can make chickens very ill, and possibly cause death if not treated.

Chickens love greens of just about any kind. They're great experimenters in the garden for the pursuit of food. They eat and scratch, foraging all day.

Chickens especially love succulent, young, green growth. However, they can't really distinguish between weeds and desirable young plants on their own.

Chickens exercise weed patrol by eating weeds, and scratching and loosening weeds out of the soil with their long nails. Some types of weeds are favorite foods for chickens. See Chapter 7 for more information on favorite chicken greens.



Take greater care managing newly planted gardens and young plants that need extra protection, or consider free-ranging your flock in another part of the garden entirely. Otherwise, chickens will eat your plants, whether you want them to or not. Use pre-determined runs or zones, and calculated managing of your garden. We cover creating space for your free-range chickens in Chapter 4.

Free-range chickens don't usually harm established gardens and mature plants. However, don't be alarmed if your chickens sometimes make a mess in the garden, and are usually attracted to the parts of the garden just planted, mulched, and manicured. It usually doesn't amount to more than taking a quick broom or rake to a spot, to tidy up after them.

Creating Sustainability in Your Own Backyard

Sustainability is the ability to maintain a desired level of ecological balance without depleting natural resources. To some degree, it's also being self-sufficient. In this day and age, global warming, diminishing water resources, extreme weather, rising energy costs, and genetic engineering of food are just a few reasons to create sustainability in your own garden.

The more time you can devote to growing your own food, raising your own chickens, composting, recycling, collecting rainwater, and conserving resources, the richer and more self-sustainable your life will be. Your food will be more flavorful, and it's rewarding that you grew it and can share it with others. Having a garden and growing your own food naturally aligns you with the rhythms of the seasons. Keeping a flock of chickens in your garden rewards you with the tastiest, most beautiful, and freshest eggs.

Successfully composting and creating humus to return to your soil costs you nothing yet dramatically and organically improves the health of your soil. Figure 1-9 illustrates how chickens in your garden create a sustainability balance.

Today you can see a great renaissance in gardening and animal husbandry to explore the many heirloom seeds, fruits, vegetables, and animal breeds that have been nearly lost or forgotten since the 19th century.

Often, produce varieties that traveled well won out to others that didn't but had better flavor. Animal breeds with high fertility and rapid weight gain were genetically favored over ones that didn't. Man imports and freights food from other countries for year-round availability. Creating sustainability in your own backyard gives you more flexibility to grow a much more diverse array of food for yourself and loved ones.

We encourage you to explore all the ways you can be sustainable and self-sufficient in your own garden. Consider solar heating, solar power, windmill energy, keeping bees, creating a worm farm, and collecting rain water as a few more suggestions.

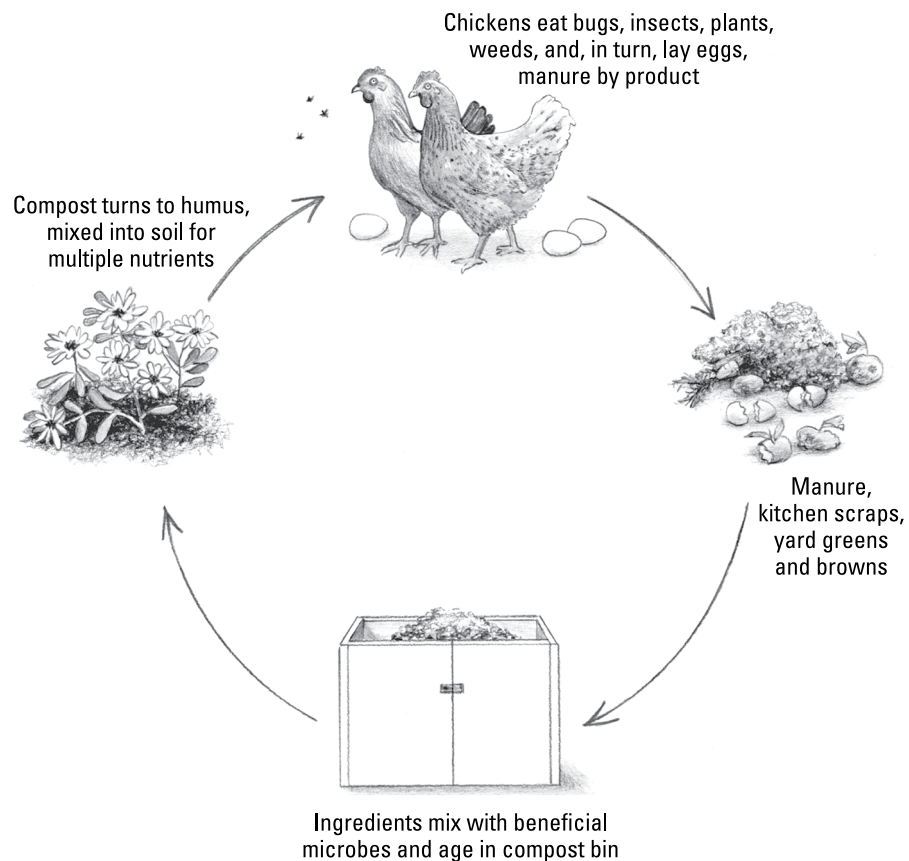


Figure 1-9: Sustainability is a benefit of raising chickens in your garden.

Manure management, recycling, and composting

If you have chickens, you will have manure. Fortunately, chicken manure is among the most prized of manures. Fresh chicken manure is considered a “hot” manure. Chicken manure needs to be composted and aged at least two to three months before you use it in your garden. If you don’t wait that long, it will burn your plants.



Manure is a good source of organic material for composting. Not all manures are the same in composition. Nutrient levels can vary within manures considerably, depending on the diet and age of the animals, and the type of bedding manure is mixed with. For instance, manure mixed with straw has a different nitrogen composition than pure manure.

“Hot” manures are high in nitrogen, and they need time to mellow. “Cold” manures, such as from horses, are lower in nitrogen and are generally safe to use at all times. Check out Table 1-1 for a look at manure composition levels in different animals. The first number indicates Nitrogen (N), the second number indicates Phosphorous (P), and the third number indicates Potash (K).

Table 1-1 Manure Composition Levels: Nitrogen, Phosphorous, and Potash in Different Animal’s Manures				
Animal Producing the Manure	Hot or Cold Manure?	Nitrogen Level	Phosphorous Level	Potash Level
Rabbit	Hot	2.4 N	1.4 P	0.60 K
Chicken	Hot	1.1 N	0.80 P	0.50 K
Sheep	Hot	0.70 N	0.30 P	0.90 K
Steer	Cold	0.70 N	0.30 P	0.40 K
Horse	Cold	0.70 N	0.30 P	0.60 K
Dairy cow	Cold	0.25 N	0.15 P	0.25 K

Sources: Rodale’s All-New Encyclopedia of Organic Gardening, An Illustrated Guide to Organic Gardening, by Sunset Publishing, and the Rodale Guide to Composting.



Chicken manure is very high in nitrogen and a very desirable fertilizer for a garden. It is a hot manure, which needs time to age before adding it to your soil. Composting is an ideal method for aging chicken manure.

When we speak of manure management and composting, we're speaking generally of the bulk manure that's coming from your chicken coop after your chickens have roosted overnight. Unless you're diligently picking up after your chickens while they're free-ranging in your garden, free-range chicken manure isn't concentrated enough to be a "hot" manure problem, and will eventually break down into your soil.



Do not walk barefoot in your garden for disease prevention when fresh manure is around. Free-ranging hens will poop manure randomly wherever they are foraging.

Manure takes a lot of management, and it's key in raising chickens in your garden. Where there's manure, there can be flies and sometimes maggots. You want your garden to look good, smell good, and have a nice ambience for entertaining and socializing. Without a manure management program, you'll have nothing but problems. (For more information on daily chicken chores, check out Chapter 3.)

Composting is the easy, practical solution for manure management. Remove manure from your chicken coop every day and turn it into your compost pile. It won't smell, and it will be less accessible to flies, mice, and rodents. In Chapter 2, we detail the manure box component, which effectively catches the bulk of the manure while your chickens are sleeping overnight on their roosting bar. The manure box, in effect, is similar to a cat's litter box. Most of your flock's manure drops and accumulates there. This manure box can be easily cleaned each morning as part of your daily routine.

Composting is great for your garden, rewarding for you, and green for the planet. It's very easy to get started, and an ideal way to manage chicken manure, which is necessary when raising chickens. The following list offers ways you save money with composting in your own garden:

- ✔ You save money by not having to buy commercial fertilizers and amendments.
- ✔ You enhance your soil health and fertility and inhibit weed growth.
- ✔ Your garden will require less water because the soil is able to retain moisture more effectively.
- ✔ By composting and recycling, less yard waste, kitchen vegetables, and fruits scraps, are going into landfills, and the organic humus is going back into your garden.

Develop a routine of adding material to your compost every day by following a routine of emptying your kitchen compost container, followed by your chicken coop muck bucket, and adding these materials to your compost bin every day. Kitchen scraps are a big part of this equation. Follow these easy steps to get the most out of your composting:

1. **Find a workable nice container, place it under your kitchen sink where you can collect each day's coffee grounds, coffee filter, fruit scraps, eggshells, and vegetable peels.** The next morning, when you are opening up your chicken coop, take the previous day's kitchen compost container with you, destined for the compost pile.
2. **When you open your chicken coop for the day, skim your manure box droppings, and place your chicken manure and any soiled bedding in a "muck" bucket.** The type of material you use as bedding in your chicken coop is considered a "brown" compost material, which works as a fantastic companion to the chicken manure, which is considered a "green" compost material. These two ingredients naturally work together in the decomposition process. Examples of popular bedding for chicken coops are pine shavings, straw, and rice hulls. All these things go into your compost bin together.
3. **In addition to the kitchen scraps and chicken manure, layer your compost bin with leaves from the yard, grass clippings, and any other green or brown ingredients from your yard.** Aim for a mixture of 50% browns (leaves, twigs, coffee filters, chicken coop bedding) and 50% greens (kitchen fruit and vegetable scraps, chicken manure, grass clippings, yard greens) for your compost pile. The smaller the pieces you add to your compost, the quicker your added material will break down into compost.
4. **Make sure your compost bin mixture is moist, adding water if your compost bin mixture is dry, and rotate it as often as you can with a pitchfork to aerate it.** Chickens are very effective at aerating a compost pile too, when given access.

In two to three months, especially if you keep your compost bin in a partly shady area and the compost stays moist, microorganisms break down these materials and create an extremely nutrient-rich, dark organic mixture. We recommend having at least two compost bins — one you're working on filling, and one that's nearly ready as humus for your garden. Figures 1-10 through 1-13 illustrate four types of backyard compost bins. For more information on composting, check out *Composting For Dummies* by Cathy Cromell and The Editors of the National Gardening Association (Wiley).

Tips for leftovers

If you have a family, chances are you have leftovers or fussy eaters who don't like their vegetables. Chickens consider leftover oatmeal, vegetables, breads, rolls, tortillas, and pancakes to be real treats. When cleaning out your refrigerator, think about what you can feed

to your chickens and what can go directly to the compost bin. This is another form of recycling. Make sure your leftovers are healthy for your chickens; avoiding high salt, sugar, and processed foods. Give your chickens leftovers in moderation.



Compost bins can be homemade with simple materials, such as stacked pallets, or half-inch wire hardware cloth in a 12-foot length, that can be wrapped in a circle and held together with a hook and eye at the top and bottom. You can also find plans on the Internet for making various types of compost bins, or manufactured bins available for sale at nurseries and by mail order.

Check with your city to see whether they subsidize a compost bin program. A lot of progressive cities and towns encourage their citizens to compost by offering such a program.

The best compost bin is the one that is convenient, fits your budget, and works best for you. The many types of compost bins illustrated all do a wonderful job of collecting your many layers, and garnish the same end result –a beautiful humus material.

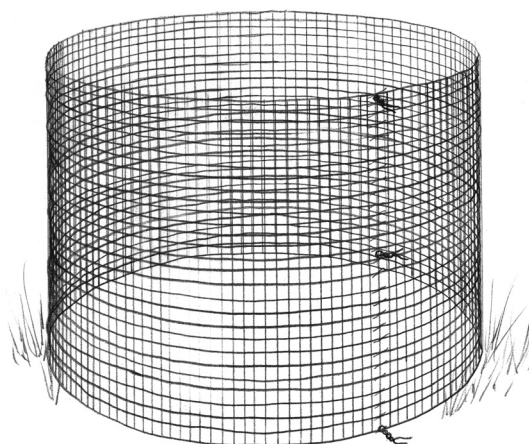


Figure 1-10:
A handmade
wire com-
post bin.

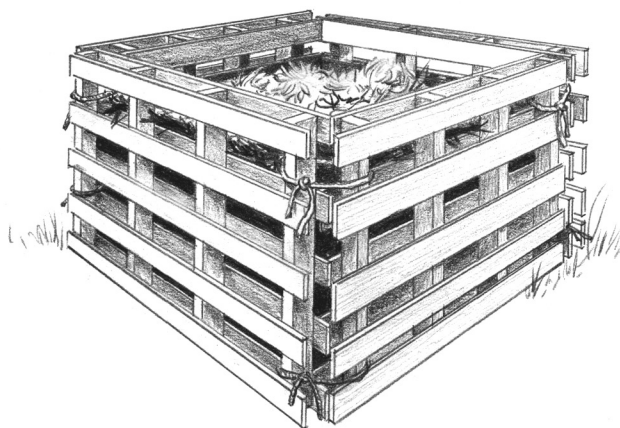


Figure 1-11:
A handmade
pallet com-
post bin.

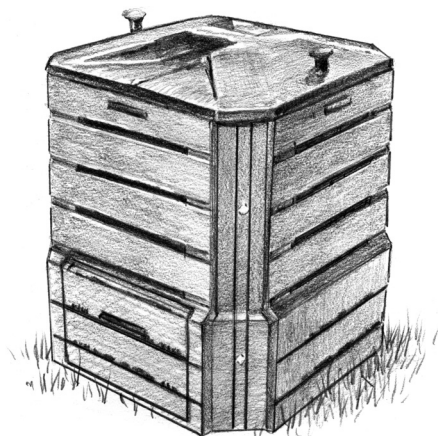


Figure 1-12:
A commercial stacking
compost
bin.

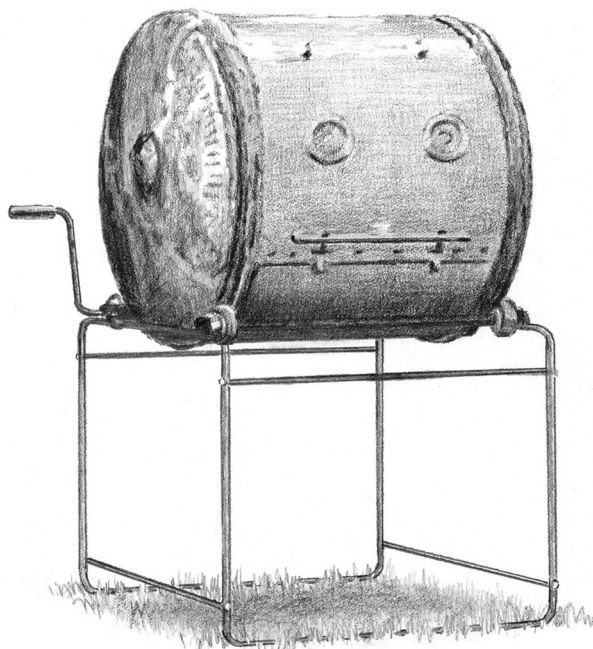


Figure 1-13:
A commercial turning
compost
bin.

Every egg is golden

A very important aspect of sustainability is growing or raising your own food and the undeniable difference in flavor. Free-range chickens in your garden lay incredibly tasty fresh eggs, with yolks that are deep sunset-orange in color, and albumen whites that stand firm.

It makes sense that hens allowed to free-range and eat their natural diet of a variety of seeds, green plants, insects, and worms, along with a supplemental laying mash, will lay incredible eggs. You will be rewarded with every egg being golden.

In 2007, *Mother Earth News* conducted a well-documented study that compared free-range eggs with the U.S. Department of Agriculture nutrient analysis of commercial eggs. The results are astounding. The study shows that free-range chicken eggs had one-third less cholesterol, one-quarter less saturated fat, two-thirds more vitamin A, twice as much omega-3 fatty acids, three times as much vitamin E, and seven times as much beta-carotene.

In your coop, always provide a bucket of properly fortified feed. This feed is a well-rounded balanced food source. It's usually difficult for a backyard flock to get all the nutrients they need solely from foraging in your garden. Give them access to this feed whether they're in the coop or free-ranging in the garden during the day.

When hens are free-ranging, if they have access to their feed located in the coop, they will return to their coop to eat when they wish to. This keeps their food dry and protected from moisture, wild birds, and rodents. Free-ranging hens foraging for their natural diet will eat less laying mash than hens confined to their coop and secure outside pen all day. This is perfectly fine and saves on feed costs. At night, place the feed bucket away in your safe storage area to discourage rodents from free-loading.

Feed stores have different feeds that are formulated for specific nutritional needs for different chicken ages. These feeds can come in different forms and textures, such as laying mash, crumble, and pellets. What you provide for your chickens is an individual preference and what you think your chickens like best. Make sure your laying feed is at least 16-18% protein. Be sure to read your feed label for its ingredients and expiration dates. Feed loses its nutritional value and can become stale at over six months from when it was processed.

Feed stores also offer organic feeds for various ages of chickens in different forms such as mash and crumble. Organic feeds are certified organic using organic ingredients. Organic feed is generally more expensive.

Feed stores are now offering soy-free organic laying feed, which is a soy-free alternative to the traditional soy-based poultry feed, created out of demand for those with personal health and/or personal nutrition reasons.

Chapter 2 covers more information on the proper food for your chickens.



An egg's flavor is directly related to what a hen eats. Keep free-ranging hens from eating strong-flavored foods — such as onions, garlic, fishmeal,— and excessive amounts of flax seed. Eggs that are stored next to strong foods and odors can also absorb unpleasant odors and flavors. This is also true of environmental odors, such as gasoline, kerosene, ammonia, and mold.

Over the course of their lives, hens generally lay their eggs in a traditional bell curve model. They start slowly in terms of egg size and production. They hit their peak in the first couple years, laying normal-sized eggs. And then they gradually taper off, laying fewer (but still wonderful) eggs as they get older.

Chickens don't lay an egg every day. Chickens that are considered to be excellent egg layers will lay around 300 eggs per year. Chickens that are good egg layers will lay around 200-250 eggs per year. The breed and age of a hen make a difference, too.

Hens usually lay their eggs in the morning. A hen lays her egg an hour later each day, and eventually resets herself by skipping an egg-laying day. She then begins to lay in the morning hours once again for several days. Collecting your eggs every day gives you the freshest eggs possible. It also gives you and your hens a routine and an idea of how many eggs your hens are laying each day. You can even keep a journal and keep track of the number of eggs.

Sometimes you may reach for an egg only to find it's still warm from a hen's body. It doesn't get any fresher than that. At the end of their egg-laying process, hens put a natural protective bloom, a nearly invisible coating, around each egg to seal eggshell pores and keep out bacteria. This coating helps ensure freshness. It isn't necessary to wash your collected eggs, and wash away this protective coating, unless an egg is dirty from manure or mud.

An egg is shaped with a pointed-end and a large end. Store your fresh eggs, pointed-end down, in a covered egg carton in the coolest part of the refrigerator after collecting. Avoid storing eggs in the refrigerator door, because they lose the moisture that keeps them fresh, and are exposed to warm air when the refrigerator is opened. Fresh-laid refrigerated eggs will stay fresh for up to four weeks.



An easy way to determine an egg's freshness is to simply float it in a glass bowl. Eggs have an air cell, which determines how it reacts in a body of water. A fresh-laid egg has a small air cell, and rests horizontally on the bottom of a glass bowl. The older the egg is, the larger its egg cell becomes. A very old egg floats on the surface of a glass bowl.

Cooking and baking with fresh eggs takes you to new culinary heights. Share your fresh eggs with your family, friends, and neighbors, and everyone notices a difference. Give a dozen wrapped with a pretty ribbon as a hostess gift and your host or hostess will be delighted.

Having Fun with Style and Structure

Raising chickens in your garden has huge potential for further creating your preferred garden style, creating the kind of chicken coop you prefer, and how you actually manage your free-range chickens.

People new to chickens can easily get emotionally attached to them. They soon get acquainted with the chickens' charming personalities and find out how much fun they are in the garden. We understand how you can become overwhelmed by the "joy of chickens" and the enjoyment they bring to your garden.



Many people give their chickens funny or endearing names — we know of some named after Hollywood actresses, First Ladies of the United States, and popular singers — and the emotional attachment is cinched. Bonnie had a pair of Black Australorp hens named Thelma and Louise. Everyone always chuckled when the two "ladies" were called.

Naming your chickens is a natural inclination. You may even go further and give their part of the garden, the chicken coop, or your garden a particular name that indicates your flock roams there. Examples of chicken coop names are Coop de Manion and Palais de Poulet (French for chicken palace). More fun examples of chicken garden areas could be Hen Haven and Chicken Little Run.

Every single garden with chickens and a chicken coop can potentially have its own unique style and setup. You can embellish your style, and have a lot of fun with it. In fact, the more creative you are, the better. Your local spring garden tours are great places to find ideas for creating a garden style, adding chickens, and including chicken coops. Chickens have become so popular that they're virtually creative extensions of your garden. Here are a few examples of fun styling in the garden:

- ✓ **Tropical garden style:** Your garden is planted with banana trees, palms, pineapple guava trees, and colorful canna. Your chickens have a coop that looks like a tiki hut, complete with a thatched palm frond roof.
- ✓ **Artist garden style:** If you have a flair for a certain art medium, incorporate it into the décor of your chicken coop and garden. Always make sure it is not toxic or harmful to your chickens. We have a friend, Kathy Lafleur, who's an artist and loves to create mosaics and ceramics. The front façade of her chicken coop is a complete mosaic masterpiece, detailed with mirrors and tiny handmade ceramic embellishments of snails, bluebirds, and garden elements. She even created a life-sized mosaic sculpture scarecrow to stand guard in the nearby garden.
- ✓ **Modern garden style:** Maybe you have a modern style home, and prefer a complementary modern style garden and matching modern chicken coop. Create a modern two-story chicken coop with clean lines. The bottom level could be an enclosed pen, providing feed and water. An incline ladder allows chickens to nest and sleep peacefully in the top level. Strong lines, using plant repetition, ornamental grasses, and horse-tail, could emphasize a modern garden look.
- ✓ **Flea market garden style:** Perhaps you're a flea market junkie and love to decorate with your fabulous finds. Your eclectic taste naturally spills into your garden and chicken coop. You create a unique chicken coop with re-purposed materials, a row of vintage nesting boxes, and great finds. Your chicken coop is a collage of patina colors, perhaps surrounded by textural succulents.

Don't forget about sheds and storage structures. These buildings can also be styled and embellished to fit into your chicken theme and garden ambience. Whatever your preferred style is, you can have fun with playing up style and structure in your garden, with your chicken coop, and most importantly, with your chickens.

Chapter 2

Preparing Your Garden for Chickens

In This Chapter

- ▶ Planning your flock to best suit your needs
 - ▶ Exploring the anatomy of a chicken coop
 - ▶ Discovering the basics required for keeping chickens
 - ▶ Adapting existing structures in your garden for housing chickens
-

Chickens are easy to keep in a garden, but they do require a healthy environment to be happy, healthy, and thriving.

The more organized you are with your chickens, the easier it is to manage them and to create a workable daily routine. Being organized makes it easier to keep their environment clean, collect eggs, protect them from trouble, maintain a healthy flock, and have an overall positive experience.

The best time to get chickens is spring to early summer. At this time, you find the best selection of various breeds at feed stores, through mail order hatcheries, at local breeders, and through online chicken forums. Days are getting warmer and longer. It's a convenient time to be in the garden.



Consider preordering your chicks starting in January from some online sources with shipping dates in the spring. A good time to do this is the same time you are ordering seeds from your seed catalogs in wintertime.

In this chapter we detail which types of chickens may be best suited for your lifestyle and needs as well as the basics for what kind of environment you need to provide your chickens.

Planning Your Flock

Before you start placing structures in your garden, planning for your flock is essential. Do you want chickens for egg laying, meat birds for eating, special breed birds for showing? Be clear about why you want chickens and what raising chickens means to you. Will they be pets with names? Or are they strictly for the dinner table? Check out the following sections to get a good feel for what breeds may be right for you, how many to include in your flock, and how to make sure you have enough space for the flock you want.



Purebred chickens are the offspring of a hen and a rooster of the same breed and variety, with similar genetics over a number of generations. Hybrid chickens aren't pure breeds but offspring from a combination of two different purebreds, which produce an offspring with desirable predetermined qualities. Two separate parent stocks must be maintained and bred to produce hybrid offspring.

The right breeds for your needs

If you asked 20 poultry enthusiasts which breed was their favorite, you might get 20 different answers. It really is an individual preference. Research some of the breeds you aren't familiar with, and don't let limited availability deter you. Many hatcheries have great selections of popular and rare breeds for sale as day-old chicks.



If you don't find the breed you want locally, try ordering through the mail. Sending them through the mail requires sending certain quantities — like a baker's dozen (13) or sometimes 25. Sending chicks in predetermined quantities assures that they're handled in the best way possible to keep them warm and protected. If you can't raise a flock that size, plan ahead by asking your neighbors and friends to go in with you.

With that said, some online companies like www.mypetchicken.com will ship smaller quantities depending on where you live.

To help you choose the right breeds, start by asking yourself some of these questions:

- ✓ Where do you live?
- ✓ Do you have children who will be helping care for the chickens?
- ✓ Have you ever raised chickens before, or are you an experienced poultry enthusiast?

Checking out chicken breeds

If you're crazy about a certain chicken breed, research that breed and see whether it has its own national club. These popular clubs promote the breed with enthusiastic followers, activities, and resources. For example, Marans of America Club, <http://maransofamericacub.com>.

com, promotes the Marans chicken breed in the United States. Please note that Marans aren't recognized as a purebred breed at this time, but they're very popular for backyard flocks with their dark-chocolate-colored eggs.

- ✓ Does ornamental appearance count with your chickens, or are you more concerned about whether they're good egg layers?
- ✓ Does it matter if your chickens lay white eggs, or do you want only blue eggs?
- ✓ Will your chickens be free-ranging most of the time?

Your answers will help you select the breeds best for your garden.

You'll find a tremendous variety in chicken breeds — there are approximately 400 different breeds and varieties of ornamental poultry in the world today. The term *poultry* includes chickens, bantam chickens, ducks, geese, and turkeys. Every few years, the American Poultry Association (www.amerpoultryassn.com) updates *The American Standard of Perfection* (Read Books Design), a book with color photographs and complete breed descriptions. Check for availability at your local libraries and county extension offices.

We can't cover all 400 recognized breeds, but the following sections highlight some chicken breeds and their general characteristics that might fit in well with your lifestyle and garden.

We want to show how diverse various chicken breeds can be and how choosing one breed over another might better work for you, your lifestyle, climate, and planned chicken coop and chicken garden.



One of the best chicken breed selector tools we've found is on the website www.mypetchickens.com. Simply answer six questions on what you are looking for in a chicken breed, and this tool provides you some options.

Best free-ranging breeds

Generally speaking, most of the free-ranging birds we recommend are dual-purpose breeds with docile natures. Dual-purpose is a term used for poultry breeds that are considered good egg layers and also well muscled for good

eating. Most of these breeds lay varying degrees of brown eggs. The exception is the Easter Egger, whose eggs are green-blue. The Easter Egger isn't recognized as an official breed; it's considered a mutt in the chicken world because its genetic makeup is a combination of unknown breeds. Here is a short list of the best chicken breeds for free-range chicken gardens. In the list (h) = heat tolerant, (c) = cold tolerant, and (b) = dual hardy:

- ✓ Barred Rock (c)
- ✓ Black Australorp (c)
- ✓ Buff Orpington (c)
- ✓ Easter Egger (c)
- ✓ Marans (c)
- ✓ Plymouth Rock (b)
- ✓ Rhode Island Red (b)
- ✓ Silver-Laced Wyandotte (c)
- ✓ Welsummer (b)



Avoid chicken breeds that are white-feathered for free-ranging in gardens. White-feathered chickens are much more visible to predators. Darker brown, black, and honey-colored chickens blend in better in a garden.

Family-friendly breeds

Children are drawn to the wilder- and wackier-looking breeds, yet most are docile in nature. Here are some suggested chicken breeds that are especially good for children:

- ✓ **Buff Orpingtons:** If the Silkie breed (see the later bullet) is cat-like, the Buff Orpington breed could be the Labrador dog of the chicken world. They're docile, people-friendly, and good foragers.
- ✓ **Cochins:** Cochins are a favorite with the children because they're showy and have feathered legs. They're also good foragers.
- ✓ **Houdans:** Houdans have a docile nature with an extra bonus of wild-like ornamental feathers and an aggressive foraging ability.
- ✓ **Polish:** The Polish breeds are beautiful and usually comical with that mop of feathers on their heads. Sometimes they're at a real disadvantage in the garden, simply because they can't see very well with that headdress. Give them a trim to help them see well.

- ✓ **Silkie:** Silkies are very docile chickens that make good pets. They're reminiscent of Persian cats. They're quite different in appearance from other chickens, with their fluffy plumage, dark blue flesh and bones, and five toes on each foot (all other chickens have four toes on each foot). Silkies can get wet and cold easily from the very nature of their fluffy plumage in an outdoor environment. They can be a good free-ranging breed for a garden if you can keep them dry and out of inclement weather.

Cold-hardy breeds

Chickens originate from all corners of the world — Britain, Canada, China, Egypt, France, and South America to name a few. Chickens thrive in all different parts of the world and in all different climates. The place of origin for each breed is a good indication of whether it can tolerate hot or cold environments. Cold-hardy breeds have shorter, smaller combs and wattles, which are less prone to frostbite. In the United States, you can raise chickens in virtually every state.

Chickens can tolerate dry cold overall better than the heat simply because they don't have the capability to perspire and remove heat from their bodies. If you live in a cold climate, take precautions in the winter to insulate and possibly heat your chicken coop to at least just above freezing; in extreme conditions move your flock temporarily into a heated garage. In extreme cold temperatures, use heating elements to keep your chicken coop and waterers above freezing temperatures. Chickens suffering from cold will stop eating and egg laying, and they may even suffer from frostbitten combs.

For cold climates, choose cold-hardy breeds for your flock. These breeds are usually dual-purpose, heavy-feathered chickens with short combs. Here is a list of some breeds that do well in cold weather:

- ✓ Brahma
- ✓ Buckeye
- ✓ Chantecler
- ✓ Cochin
- ✓ Hamburg
- ✓ Holland
- ✓ Plymouth Rock
- ✓ Wyandotte
- ✓ Also, many of the previously mentioned free-ranging breeds

Heat-tolerant breeds

If you live in the desert or a place where summer temperatures are above 90 degrees Fahrenheit for weeks at a time, you must take extra measures to keep your chicken flock cool. Make sure you have more than one source of water for your chickens. If they're able to roam freely in your garden, your chickens will probably try to bury themselves in cool soil under a large, shaded shrub.

If they're in a chicken coop in high temperatures, provide plenty of water and fresh-air circulation — either natural or with fans. An automatic misting fogger system is also a good solution for extreme heat. Chickens in heat distress pant and lift their wings away from their bodies. In high temperatures, chickens stop eating and laying eggs too.

Following are some suggestions for heat-tolerant chicken breeds that originate from hot climates:

- ✓ Andalusian
- ✓ Catalana
- ✓ Cubalaya
- ✓ Fayoumi
- ✓ Polish
- ✓ Spanish

Breeds that lay different-colored eggs

If you want chicken breeds that give you a variety of egg colors, like a basket of Easter eggs every day, choose breeds that give you a variety of colors.

Most eggshell colors fall under some variation of white, brown, or blue-green, specific to each chicken breed. Eggshell colors are created by pigments during the egg-laying process. In the case of brown eggshells, the brown pigment is deposited in the *bloom*, the protective coating for the egg and the last layer for the eggshell before the egg is laid. While the outside eggshell color is brown, the inside eggshell is white.

With blue-green-colored eggs, the process is slightly different, with the color pigment created throughout the entire eggshell formation process, hence the eggshell is the same blue-green color on the inside as well as on the outside.



Generally speaking, the color of a hen's earlobe can indicate the color of her eggs. A hen's ear is flat and unobtrusive, located behind and below her eyes. Around the ear is a soft tissue of skin, or her earlobe. Although there are exceptions to the rule, the color of a hen's earlobe is a good indication of what color egg she lays. A white earlobe suggests a white eggshell. A red

earlobe suggests a brown eggshell. Araucanas and Ameraucanas are one of the exceptions, having red earlobes and laying eggs with blue-green eggshells.

Here are some suggestions for breeds with different colors of eggs:

- ✓ **Blue-green eggs:** Ameraucana, Araucana, Easter Egger
- ✓ **Brown eggs:** Barred Rock, Black Australorp, Buff Orpington, Cochin, Dark Star Plymouth Rock, Rhode Island Red, Silver-Laced Wyandotte
- ✓ **Dark-chocolate eggs:** Barnevelder, Penedesenca, Welsumer, and some varieties of Marans
- ✓ **Off-white eggs:** Hamburg
- ✓ **White eggs:** Ancona, Polish, Silkie, White Leghorn

Heritage breeds

Even with the amazing number of chicken breeds today, nearly three dozen chicken breeds are in danger of extinction. Heritage chicken breeds, also called heirloom chicken breeds, are breeds in danger.

These breeds tend to be larger birds that are slower to mature, yet they're productive longer in life. They originate from purebred genetic lines that existed prior to 1940. Heritage chickens are good foragers and do well in free-range and pasturing environments. With the industrialization of chickens in the mid-20th century, many of these heirloom breeds were deemed less desirable.

For a complete listing of these endangered chicken breeds, go to www.heritagechicken.org. This conservancy site lists breeders and hatcheries and tells you how you can purchase these breeds. The following is a list of some of the heritage chicken breeds that are both in danger and unique to North America:

- ✓ Buckeye
- ✓ Chantecler
- ✓ Cubalaya
- ✓ Delaware
- ✓ Dominique
- ✓ Holland
- ✓ Java
- ✓ Jersey Giant

Flock size does matter

If you're planning to start with a small flock, start with at least three chickens. They like to be active, and they require space. They prefer space to roam, rather than confinement, although sometimes they need to be confined. Other times, foraging in your garden is best.

If you have more space, perhaps you want a larger flock. Having chickens is addicting. It is common for people to increase their flock over time with new breeds, adoption, and the tempting visit to the feed store. Above all, pay attention to the criteria we suggest for flock size.

Another consideration for chicken flock size is personal egg consumption. Are you a family of eight, all of whom love eggs? Are you not an egg eater at all, but love the idea of chickens in your garden? Are you a bachelor who loves gourmet omelets? Generally speaking, allow two laying hens per person eating eggs. But first pay attention to the space reserved for a chicken coop, an outside pen, and your garden size.

The space and square footage you can devote to a chicken coop is going to tell you how many chickens you can have in your flock. Most people don't think about space requirements and usually err on the side of having too large a flock for their needs and space. Besides the space you have to devote to a chicken coop, you need to determine the square footage you have to give them in your garden for foraging.

Got space?

Besides being social, all chicken flocks have a pecking order. There will be a dominant bird that leads, and the importance order descends down through the flock to the least dominant bird. Consider the space you have to devote to an entire chicken coop setup and work backwards.



The minimum rule of thumb is about 2 to 3 square feet per chicken inside the chicken coop, and 8 to 10 square feet per chicken in an outside run. More square footage is better.

Skimping on space requirements for a flock of chickens can cause stress, cannibalism, pecking, and sometimes even death. Cramped living space in a flock invites stress and potential for disease. The best thing you can do to keep a happy and healthy flock is to give it adequate space.

Another factor to consider with space requirements is the type of chicken breed you like best. Bantam breeds are considerably smaller chickens than heavy breed chickens, requiring less space than heavy breed or large chickens. Even though Bantam chickens are smaller, they can sometimes lay large eggs relative to their size. Table 2-1 suggests some basic space requirements.

Please note that space requirements can vary depending on your flock age and breeds, climate, season, and management of free-range garden time.

Table 2-1 **Suggested Space Requirements for Chicken Coops and Outside Pens**

<i>Breed</i>	<i>Chicken Coop Space Requirement</i>	<i>Outside Pen Space Requirement</i>
Large Chickens (standard)	2 square feet per bird	8 to 10 square feet per bird
Bantam Chickens	1 square foot per bird	4 square feet per bird



In Chapter 4, we cover in more detail how to create space for free-range chickens. A rule of thumb for free-range space is 250 to 300 square feet per bird. If you plan to create permanent runs and fencing, use 250 square feet per bird or more.

After you determine how much space you have in your garden for a chicken coop, outside pen, and free-ranging, you can figure out how many chickens you can optimally have. Leave yourself some wiggle room for changes in your flock, such as when your favorite feed store is carrying irresistible day-old chicks.



You want to provide a healthy environment for your chickens and a nice balance of space or ecosystem, which allows your garden to flourish. If your flock of chickens has too little garden space to roam in, your garden will have bald spots from over-foraging, visible poop on bare ground, a bad odor, and a problem with flies. None of that is desirable.



When raising chickens in your garden for the first time, start with a small flock. Most people underestimate space requirements and overestimate egg consumption. Build in extra space allowance, in case you want to expand your flock later.

Providing a Healthy Environment for Chickens

Chickens require very little to be healthy and content. They can entertain themselves, feed themselves, and even put themselves to bed at night.

Yes, like clockwork, chickens faithfully return to their coop at dusk to roost for the night. Just remember to close and lock their door for the night. Chickens are most vulnerable to predators at dusk when the chicken coop door is open and they are settling in to sleep. Chickens must be securely tucked in for the night in the chicken coop. At dusk, and throughout the entire night predators can stalk the chicken coop. We discuss this in detail in Chapter 10.

It's important to provide your chickens with a chicken coop or a home of their own, whether they're free-ranging or not. A chicken coop is a multi-purpose structure that protects them from harsh weather and predators at night. It's also a quiet place where hens can go to lay their eggs undisturbed.

A secure outside pen or exercise area (completely protected on top, all sides, 1 foot buried below and footed outward, using ½-inch wire mesh hardware cloth), connected seamlessly to the chicken coop is a nice element to have for the times when your chickens can't be free-ranging in your garden. (See Table 2-1 for information on space requirements.)



Here is a square footage example for a chicken coop and connected seamless outside pen. You have room for and built a chicken coop that is 4 feet x 8 feet = 32 square feet. The adjoining protected outside pen is 10 feet x 10 feet = 100 square feet. The total square footage for your chicken coop and outside pen is 132 square feet. Divide this figure by 10 (see Table 2-1, 10 sq feet per large breed), and you could adequately house 13 chickens. We previously suggested building in extra space allowance, so with this example we recommend raising 10 chickens in this space example.

Chickens need a protected, sheltered spot in your yard. Ideally, this spot is a distance away from your home but easily accessible for daily management and collecting eggs. Chickens can thrive in many different types of backyard situations; however, avoid putting them in compromising environments — such as extreme temperatures, drafts, high winds, damp conditions, and high-noise areas. Pay attention to seasonal considerations, such as protective shade in the summer and warm sun in the winter.

Anatomy of a chicken coop

Okay, you've picked out the spot. You know where in your garden you want to situate your coop and outside pen. You've carefully assessed the size of a chicken flock that is best for you. Figure 2-1 shows you the different components you need for your chicken coop.

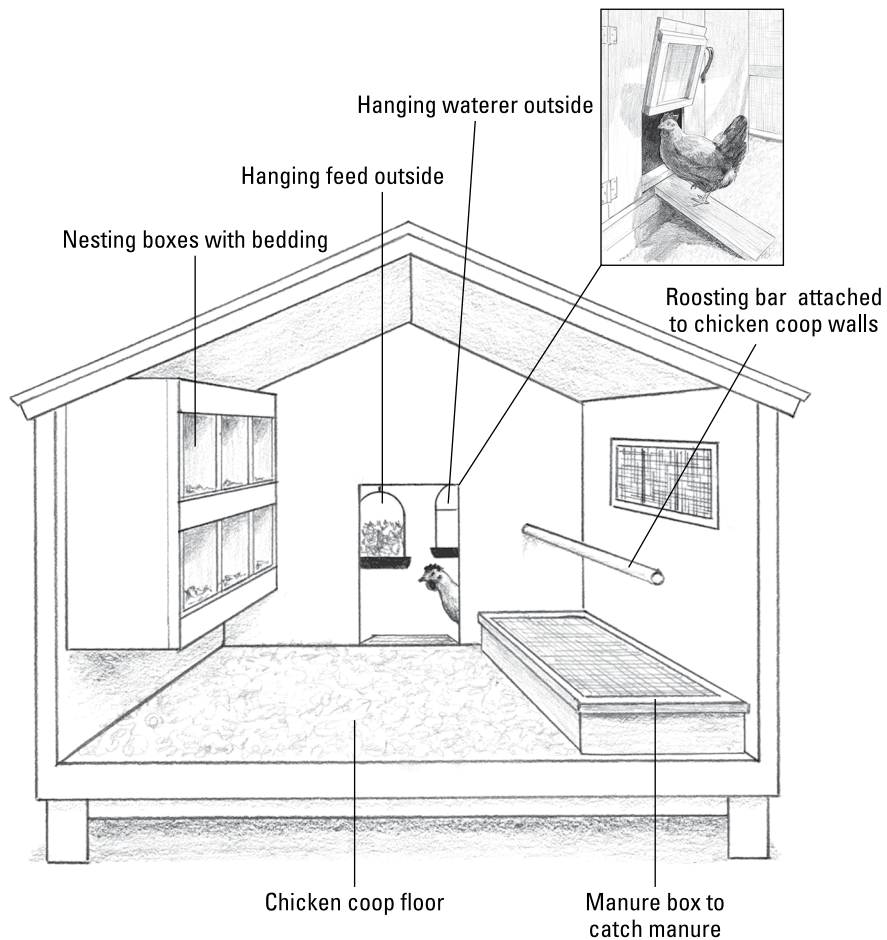


Figure 2-1:
Essential
components
of a chicken
coop.

Chicken coop

Chicken coops have many variations. They can be permanent, mobile, new, repurposed, custom, and innovative. Chicken coops can be cheap — as in free — using wood pallets or recycled materials. Or they can be as expensive and fancy as you want. However, chicken coops must have certain features to adequately house chickens. Here are some of the top features a chicken coop should have:

- ✔ **Enough space:** Chicken coops must follow the suggested square footage-to-bird ratio for the number of chickens it houses. Overcrowding of chickens causes stress and pecking, and it makes them more susceptible to disease and injury.
- ✔ **Good ventilation:** A well-ventilated coop has windows, doors, and vents that are adjustable to allow air to circulate. Chickens naturally give off ammonia and moisture in their droppings, which build up without removal and adequate air circulation. Excess moisture can cause mold and mildew and a nasty medium for disease organisms.
- ✔ **Free from drafts:** Drafts are a constant unwanted air blowing that can cause chickens to get sick. Sealing a leak, erecting a barrier wall, and paying attention to the cause of a draft can correct drafts.
- ✔ **Proper Temperature Control:** Chicken coop temperatures can fluctuate throughout the day and throughout the year with the different seasons. Access to a chicken coop can help shelter chickens from heat in the summer and cold temperatures in the winter. A chicken's body operates optimally between the temperatures of 70 to 75 degrees Fahrenheit. Chickens are however surprisingly adaptable to a wide range of temperatures, from sub-freezing to heat over 90 degrees Fahrenheit. It is wise to raise chicken breeds suitable for your climate, especially if you experience high heat or very cold temperatures.

Temperatures between 40 degrees Fahrenheit and 85 degrees Fahrenheit are considered suitable temperature ranges for chickens. When suitable temperatures are exceeded, either hot or cold, chickens will change their eating habits and stop laying.

Chickens don't have the ability to perspire. In hot weather, chickens keep themselves cool by "pant breathing" with their mouths open and holding their wings out and away from their bodies. Their wattles and combs also help to keep them cool. When temperatures exceed 95 degrees, chickens may start dying.

When temperatures approach freezing, chickens will eat more to obtain energy needed to maintain their bodies and to keep themselves warm. In cold winters, it helps to have your chicken coop roof and walls insulated. Consider adding bales of straw for extra insulation and protection

on exposed sides of a chicken coop. In freezing temperatures, make sure your chickens have ventilation but no drafts to counter the moisture in their manure. It is critical that their water remain free-running and not freeze. In some instances, a simple red heat lamp carefully placed and safely secured against fire hazard can keep water from freezing and heat a chicken coop. A chicken coop may not need to be heated, and a heated chicken coop may not necessarily be healthy for a flock. It depends on your climate, weather, and circumstance. See the sidebar, “Thriving in many types of environment,” in this chapter for more information.

- ✓ **Sturdy construction:** Chicken coops need to protect chickens from extreme weather, hot sun, heavy rain, and snow. They must be sturdy enough to carry weight and withstand blustery winds.
- ✓ **Good drainage:** Chicken coops shouldn’t be situated in low spots on your property or garden. A chicken coop should be located where drainage is good and not around wet or problem areas of your garden. Elevate a chicken coop off the ground at least 1 foot for many reasons. An elevated coop ensures air can circulate around the coop, can prevent flooding in flood-prone areas, and prevents rats and mice from nesting. An added bonus of an elevated chicken coop, as we discuss in Chapter 10, is that it can serve as a structure for free-ranging chickens to escape under from predators.
- ✓ **Cleanliness:** A chicken coop should be easy to keep clean. It needs to be free from dust, dirt, and cobwebs. Its roof should be watertight. Make sure it doesn’t have any holes for mice and other rodents to get in. It shouldn’t have any nails or sharp objects sticking out that could injure a chicken. It should have a solid floor made out of wood or concrete. A layer of bedding — such as pine shavings, rice hulls, or straw — makes a nice cushion for inside nesting boxes and the floor of the coop.



In addition to having the proper features for maintaining a healthy flock, chicken coops need to be positioned correctly in your garden. Chickens respond well to sunlight for their egg laying and overall health. Egg production is stimulated by daylight length. Position your chicken coop and outside pen to access natural light, but don’t forget to provide shade during the hottest months of the year with shade cloth or landscaping.

Chickens do best with fresh water at all times and a source for formulated laying mash. A chicken coop helps keep their water clean and their feed dry and protected. Wet feed can become moldy, get rancid, and attract unwanted bugs. Don’t give chickens wet or moldy feed.

Thriving in many types of environments

Although we mention that chickens thrive best in temperatures between 40 degrees Fahrenheit to 85 degrees Fahrenheit, they can tolerate extreme hot and cold temperatures that we experience in different parts of this country. Outside these temperature parameters, chickens slow down their egg laying and, in some cases, stop all together, become less active, and concentrate on their survival.

If you live in places like Alaska, Maine, Minnesota, and North Dakota, you probably know you will have to take precautions to insulate your coop, or heat it, or have the ability to move your flock to a temporary spot. Precautions must be made for chickens to have

drinking water that is not frozen and plenty of available laying formula to keep their bodies fueled. In extreme temperatures, you should be monitoring your flock by checking them more often. Chickens will fare much better in dry cold versus damp cold.

In spots with extreme temperatures such as Florida, Arizona, and desert climates, with unrelenting sun, chickens must have shade, shelter, fresh water, and food, as well.

Tap into your local feed store, poultry clubs, and online forums for information on how best to protect your chickens in these extreme environments.

A chicken coop should provide access seamlessly to an outside pen or the outdoors during the day (see the later section “Outside pen” for details on this part of the chicken environment). Chickens need access to their coop for their nesting boxes and laying their eggs. Sand is a nice material that chickens love and is good for drainage in an outside protected pen.

Nesting boxes

Nesting boxes are a way of organizing your hens and their business of egg laying. If you don’t provide nesting boxes, you could find eggs everywhere — as if you were on an Easter egg hunt. You wouldn’t know where the eggs were laid or how fresh they were.

Organize your chicken coop with nesting boxes on one side, inside the chicken coop, away from the side of your roosting bar and manure box. Hens instinctively seek a nesting box to quietly finish the process of laying their eggs. Nesting boxes afford them a quiet, clean space to relax and lay their eggs undisturbed.

Nesting boxes can be built for ease of collecting eggs, jutting out from the outside coop wall with a small hinged roof over the boxes that lifts up for easy collecting. It can also be designed to slightly slope so the newly laid egg rolls away from the hen and towards the hinged lid. This type of nesting-box design allows for more floor space for your flock inside the coop.



If you're building a custom chicken coop, it makes sense to build your nesting boxes. As a suggestion, six nesting boxes, in two rows of three, are sufficient to cover a medium- to large-size flock. Three nesting boxes are sufficient for most small flocks and will usually fit nicely on the wall of one side of the chicken coop. It is a good idea to have more nesting boxes than are actually needed for hens that go broody or sit on eggs to hatch, or for older hens for sleeping that simply can't make it to the roosting bar anymore.

Providing a nesting box for each hen isn't necessary because not all hens lay at the same time. One nesting box for every three hens is a good ratio. Sometimes you may have a few social hens using one nesting box together. You may find that your hens have a favorite nesting box, laying all their eggs in the same nesting box, one after another.

Occasionally, you will have a free-ranging hen that likes nesting and laying her eggs outside. To prevent this, keep your hens in their chicken coop through the morning hours, which is the prevailing laying time.

Nesting boxes should be mounted off the floor of the chicken coop. We suggest a height at 18 inches off the coop floor for the first row and building a second row of nesting boxes immediately on top of the first set of nesting boxes at another 15 inches to 18 inches in height. Make sure your nesting boxes are secured by screwing nesting boxes into the wall of the chicken coop to hold the weight of several hens. If you can't screw directly into the wall of your chicken coop, use sturdy brackets, or create a framework of wood to hold the nesting boxes.

A minimum size for nesting boxes is 12 inches wide by 12 inches deep by 12 inches high. If you have the room, make your nesting boxes a little larger for your hens.

Nesting boxes can be made out of plywood. We've seen vintage one-piece metal nesting boxes at flea markets. Nesting boxes are open on one side where the hen enters and lies down. Create a little lip on the front of each nesting box so your hens have something to grip when entering the nesting box and to prevent eggs from rolling out.

Nesting boxes can be re-purposed from plastic buckets, plastic milk crates, or just about anything that has one opening, is large enough for a hen, and is nontoxic for hens. Do not use anything that has sharp points or tips or protrudes outward.

Dry, fresh bedding — consisting of straw, pine shavings, or rice hulls — is comfortable for laying hens and keeps their eggs clean and secure until you collect them. Rotate used bedding on a regular basis to your chicken coop floor. Hens don't normally dirty their nesting boxes, but clean out any

manure droppings. If an egg has somehow cracked and broken open in the nesting boxes, remove the egg and clean out the egg-soaked bedding. Broken eggs can attract ants and can also encourage chickens to eat their own eggs — a terrible habit that's incredibly difficult to break.

Roosting bar

Another important component of your chicken coop is the roosting bar. Housed chickens don't normally sleep in nesting boxes or on the floor of their chicken coop. They sleep shoulder to shoulder on an elevated roosting bar at night. This bar simulates a tree limb. Chickens instinctively know they can protect themselves better from predators up in a tree on a limb at night. The same concept holds true for your backyard flock utilizing its night roosting bar inside the chicken coop.



Chickens instinctively return to their coop at dusk. If you're missing any hens, search for them immediately because something may be wrong. Don't assume that they'll sleep safely up in a tree. Most likely a predator will find them in the night, before you find them the next morning.

The roosting bar is an elevated perch where chickens can comfortably roost and sleep through the night. It's usually at least two feet off the chicken coop floor. Allow six to ten inches of roosting bar width per chicken. A roosting bar should be built away from the nesting boxes. A good place is situated opposite the nesting boxes in the chicken coop.

A two-inch round wooden dowel is about right for large-size chickens. Bantam chickens are more comfortable with a smaller-diameter roost of about one and a quarter inches.

Manure box

The manure box is a beautiful thing. It's situated directly below the roosting bar, filled with bedding and with a moveable screen lid. This screen lid should be made of durable quarter-inch wire mesh.

Most of your chicken manure droppings will fall to the manure screen lid and box during the night. This box is almost like a cat's litter box that's been modified for chickens. Each morning, you skim off the manure on top of the lid and open and skim off manure that fell through the lid. Then your chicken coop is clean for the day.

Every month, take the manure screen lid outside, hose it off thoroughly, and brush it down with soap and water. Let it dry thoroughly in the sun before returning it to the chicken coop. Some chicken coop designs with a closable lid allow the manure box to be cleaned from the outside. Personally, we

prefer movable manure boxes that aren't stationary and that can be moved out of the chicken coop and deep cleaned quarterly. The whole area in the chicken coop around the manure box can be swept out. The manure box and lid can be hosed down outside the chicken coop and left to dry in the sun before returning them to their spot in the chicken coop.

Outside pen

The outside pen is an integral part of a chicken coop. It gives you flexibility with your flock when it can't be free-ranging in your garden. This outdoor space allows your chickens more exercise room than a chicken coop, yet still gives them total protection. Usually an outside pen adjoins seamlessly to a chicken coop. Between the two areas is a door that can be closed at night and when weather is extreme. In areas with extreme weather, the outside pen is typically entirely covered.

The outside pen is fairly basic. Allow eight to ten square feet per hen for heavy breed or large chickens and four square feet per hen for Bantams. Add a ramp or ladder if the floor of your chicken coop and the floor of your outside pen have a difference in elevation. Hanging feeders and waterers keep feed and water clean. Bring the hanging feeder to a secure storage area at night. Leaving the chicken feeder in the outside pen or chicken coop at night invites mice and rats. Chickens do not eat in the dark. The waterer can be left in the outside pen at night.



Constructing an outside pen is fairly easy. Here are some basic instructions for constructing an outside pen:

- ✓ Create your desired dimensions.
- ✓ Frame your outside pen by using 4x4 boards, anchoring the corners and middle of the pen, combined with 2x4 boards between and on top for strength.
- ✓ Bury posts and set in cement.
- ✓ Allow for a human-size door, ideally greater than the width of a wheelbarrow, at the back of the pen for easy entry.
- ✓ Cover the entire sides, back, and top with durable half-inch wire mesh hardware cloth. Nail wire mesh hardware cloth to your wood framework. All wire mesh hardware cloth should be left smooth, without any sharp points, to keep your chickens from harm.

A totally enclosed outside pen protects your hens from hawks and owls from above, and the possibility of raccoons, coyotes, and other predators at ground level.

See the “Step three: Modifying chain link fencing” section in this chapter for information on burying wire mesh to help keep predators out of your pen. (See Chapter 10 for more information on protecting your chickens from predators.)

An outside pen does well with a dirt or sandy-type floor. Daily manure droppings generally permeate the soil, and daily cleaning isn’t necessary. Rake and level the outside pen floor when it becomes compacted and/or uneven, and add more soil if necessary. A soil floor is easy on a chickens’ feet, and they enjoy playing in it for dirt baths. Make sure that an outside pen has both sun and shade, using shade cloth or landscaping.



Adding sand to an outside pen is a wonderful addition; that keeps smell to a minimum, and helps muddy areas from developing and placing your chickens at risk for illnesses such as coccidiosis.

Tips on keeping a clean chicken coop

In a clean environment, your chickens will be healthy, happy, and flourishing for many years. On the flip side, if your chicken coop and outside pen are always dirty, you’re courting disease, stress, flies, rancid food, rodents, dirty eggs, and more. Your flock can’t live an optimum life in a dirty environment.



As long as your chickens are in a clean and protected environment, create whatever chicken coop setup works for you. Owners in different parts of the world, with different climates, have created lots of unique chicken coops.

In addition to the manure box cleaning methods we give you in the “Manure box” section, clean your manure box under your roosting bar every morning by skimming it. Put the manure in a muck bucket and then put everything from your muck bucket in your compost bin. In Chapter 1 we detail the many benefits of composting and how to integrate your chicken manure into the process.

Rotate your chicken coop bedding on a regular basis. Here’s how:

- ✓ Fresh, clean bedding always goes first to your clean nesting boxes.
- ✓ Empty used bedding from nesting boxes to your chicken coop floor.
- ✓ Take the bedding from the chicken coop floor to the manure box.
- ✓ Clean the manure box every morning, taking the manure and bedding to the compost bin.

Replenish walking bark around your chicken coop, if needed. If you have plants, vines, roses, and vegetation around your chicken coop, weed, clip, prune, and shape as needed. Never let weeds or trash linger near your chicken coop because it attracts rodents.

Providing Fresh Water, Food, and Treats

Fresh water and a well-balanced variety of food are a foundation for good management in raising and free-ranging chickens.

Providing your chickens with fresh water and a properly balanced laying feed formula ensures their health and happiness. Allowing them to forage for themselves in your garden is an added benefit to their well-being and their egg quality as a food source. Free-ranging chickens enjoy foraging for themselves and eat less formulated feed, ultimately saving on the feed bill, which is the most expensive cost of raising chickens. In addition, chickens love protein but also enjoy daily treats of many kinds.

Water

Provide your flock of chickens fresh water at all times. Water hydrates chickens and is necessary for optimum health, healthy eating, and egg laying. A mature chicken drinks one to two cups of water each day. Other factors that determine their water intake include weather, temperature, whether or not the chickens are laying eggs, and their general health.

Sources of water

Always provide at least two sources of water: one waterer inside the coop and one in the outside pen. Free-ranging chickens need a clean, fresh water source in the garden or access to their waterer located in the chicken coop. Provide a water source that covers at least a third of your flock drinking at the same time.

Different types of water systems are available for chickens. The most common is the bell waterer, made out of plastic or metal, which comes in one- to five-gallon sizes. We prefer the one- to two-gallon size, which is easier to handle, and is filled more often, keeping the water supply fresh and clean. Look for the bell waterer that has an indentation in the handle for hanging with an “S” hook. This indentation keeps the waterer in place. Keeping a water source at shoulder height for chickens helps keep their water clean from mud and manure.

If you have a large flock of chickens, you may want to look into gravity-flow systems and automatic water systems. A gravity-flow waterer is a great solution when regular plumbing isn't practical. A holding tank stores water and is periodically filled as needed. Chickens drink water from nipples attached to the holding tank.

Automatic waterers are connected to plumbing and refill automatically as chickens drink from them. Automatic waterers are convenient, but you still have to watch them carefully for plugging, leaking, and malfunction.

Keep it clean and filled

Keep your waterers clean by soaking them in mild dish detergent and one tablespoon of non-chlorine bleach or distilled white vinegar. Scrub when necessary with a small brush, such as a designated toothbrush. Rinse the waterer well at least three times. Clean your waterer as often as necessary. Always provide your chickens with a water source while you're cleaning a waterer.

In summer months, it is especially important to check on waterers going dry and empty and growing green algae. To combat algae, keep water supplies out of the sun and in shady or protected areas. Your chickens will appreciate fresh, cool water, rather than water that's warmed in the sun.



Wash your waterers frequently with distilled vinegar. Adding a tablespoon per gallon of apple cider vinegar helps to prevent algae from forming and helps to promote your chickens' gastrointestinal health. However, the apple cider vinegar can only be used in plastic waterers; the metal ones will rust over time.



If your water sources may freeze in the winter, check at least twice a day that your chickens have water and that their source isn't frozen. To heat waterers and keep water flowing, you can use heated coils around water pipes, an immersion heater that sits in the bottom of a trough, or even a plug-in heated pet water bowl. You can also use safely secured red heat lamps to keep water free-running and prevent freezing. When in doubt what heating system to use, check with your local feed store.

It is extremely important to be very careful when introducing electricity into a coop. While electric heaters keep water flowing, use extreme caution with the mixture of electricity, dry bedding, and wood coops. Chicken coop fires can be a very real danger. Add to this curious chickens that love to peck at wires and stray things, and it can be a dangerous mix.

Food

Your local feed store is the best source for your chicken feed. Chickens are continual feeders, and they live to eat. They eat to meet their energy needs. These energy needs are variable over the course of their lives, depending on their egg production, the climate they live in, and their general health.

Most pullets start laying for the first time at 5 to 6 months of age. Some of the poultry heritage breeds begin laying later at 7 to 8 months of age. We recommend starting your pullets on a laying mash about a month before they're expected to begin laying or at approximately 20 weeks of age.

Laying formula can come in different textures of mash (fine), crumble, and pellets. Which texture to buy is an individual choice. However, some say the laying mash is so fine it can be wasted and is hard to pick up after. Most types of laying feed are available at feed stores.

Laying feed is a balanced complete formula with about 16 percent protein, calcium, and grit. Laying hens need a calcium supplement in their feed for strong eggshells. All chickens need some grit in their diets to grind up their food. Because chickens have no teeth, they rely on grit to grind up their food in their gizzards.

Another plus for free-ranging your chickens is that they naturally pick up grit in their diet throughout the day. If you are feeding your chickens a whole-grain diet or pasturing them on a heavy grass diet, you will want to provide supplemental mineral grit and a source of calcium carbonate, such as crushed oyster shells.

Grit, which is ground-up stone, is picked up in the hen's environment and is not absorbed into a hen's body. Ground oyster shells are a source of calcium carbonate for laying hens that do double duty as a source of calcium and a source of grit in a hen's gizzard. Ground oyster shells are eventually absorbed by the hen's body as dietary calcium.

Calcium is a critical component of a hen's diet. A laying hen utilizes calcium from her diet to create eggshells, as well as calcium from her own skeletal bones. Hens have different calcium requirements that vary with age, diet, and general condition of health.

Another source of calcium is recycling eggshells from your hens. You can bake them in an oven at a low heat until they are thoroughly dried and with a baking pen crush them into very small pieces. At this point you can feed them back to your hens.

We personally don't like to give laying hens crushed eggshells as a calcium supplement because it can lead to the problem of pecking and breaking laid eggs. It can teach chickens to recognize eggs as something to peck at and can create a behavior called "egg eating," which is very difficult — almost impossible — to correct.

Give your chickens access to their feed bucket all day. The feed bucket stays in the chicken coop or outside pen. If chickens are free-ranging, they can return to the coop for feed if they choose, but they're usually satisfied foraging for their food in the garden. At night, take the feed bucket out of the coop and store it in a safe place, such as a storage shed. You can actually put it inside a clean metal garbage can, where we recommend you store your bulk feed. Keeping the feed bucket out of the chicken coop at night discourages mice and rats.

In Chapter 7, we also detail for you many types of plants that are food for chickens free-ranging in a chicken garden.

Treats

Chickens love to free-range and forage to their hearts' content. When they forage, they eat all kinds of weeds, greens, and bugs in your garden. We also suggest giving them additional treats every morning, or when you're out with them in the yard. Treats are exciting for them — something that breaks up their day.

You can train your chickens to eat out of your hand. It's a great way to bond with your chickens and an easy way to train them, if you're so inclined. Look to Chapter 9 for more information on training your chickens.



If you grow heirloom tomatoes every year or strawberries for your favorite homemade jam, for example, don't feed these types of foods to your chickens as treats. Your chickens will seek them out when they're free-ranging in the garden. Give your chickens treats from your kitchen or hand feed them select edibles from your vegetable garden. Fence off your low-growing edibles for your consumption to keep away from your free-ranging chickens.

You may be amazed by the kinds of treats chickens like. If you like it, chances are your chickens will too. Just remember to give treats in moderation and no strong flavors like garlic and onion. Over time, you'll find out which treats are favored the most. Here are some tried-and-true treats for chickens:

- ✓ **Breads and starches:** Examples include rolls, pancakes, plain cooked pasta, tortillas, cooked oatmeal, and dry cereals low in sugar.
- ✓ **Crickets and mealworms:** You can find these treats at feed stores.
- ✓ **Cut-up fruits:** Try sliced apples, fresh cranberries, figs, grapes, melons, peaches, strawberries, and watermelons.
- ✓ **Greens:** Chickens like lettuce of all types, sorrel, kale, Swiss chard, cabbage, and wheatgrass.
- ✓ **Plain yogurt and kefir:** These foods aid in digestion, are a good calcium source, and discourage egg eating.
- ✓ **Sunflower seeds:** Raw sunflower seeds can be dried as a whole head or with the seeds separated. Never feed salted and processed sunflower seeds.
- ✓ **Vegetables:** Corn on the cob, cucumber, cooked potatoes, steamed squash, and pumpkin are all good choices.



Never feed chickens anything moldy, rancid, or questionable. Don't feed chickens anything that has a lot of salt, a lot of sugar, a lot of spice, caffeine, or alcohol.

Re-purposing Existing Structures for Chickens

In Chapter 1, we encourage you to have fun with style and structure when bringing chickens into your garden. We give some style ideas for fun, and we talk about how chickens can be a fun aspect of your garden.

What might be on your property now that you could modify or use in some aspect of a chicken coop or shed for storage? Besides a chicken coop, it is helpful to have a utility shed for storage, tools, and keeping feed out of the weather.

You might have some structures on your property, which have character, and with a little tweaking can become functional for raising and managing chickens. Re-purposing structures can save you time, money, and construction materials. It is a greener solution.

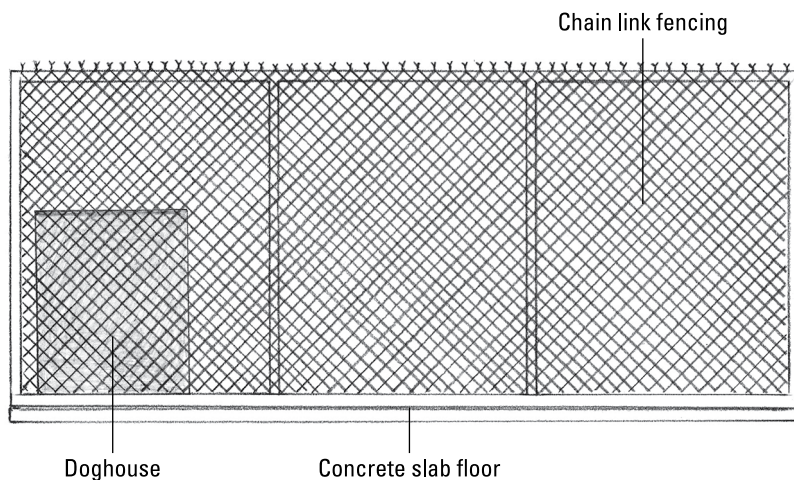
Many unique chicken coops have been built with a lot of imagination and a little of re-purposing and recycling materials. Of course, this might not fit your style or your intended design, so buying ready-made chicken coops, garden sheds, pre-fab structures are a very viable option, too.

Transforming a dog kennel

Of all the structures that may already exist in a garden, the most common is a dog kennel. It's certainly the one we're asked about the most.

See Figure 2-2 for an illustration of a typical dog kennel. A dog kennel usually contains a small to medium-sized doghouse, sometimes with a long and narrow concrete slab in front of the doghouse, and is usually surrounded by a chain link fence.

Figure 2-2:
Transition-
ing from a
dog house
and kennel
to a chicken
coop and
secure out-
side pen.



If you're planning to convert an existing dog kennel in your garden, you have a few variables to consider. Heavy breed chickens require two square feet per bird, and Bantam chickens require one square foot per bird for a chicken coop.

The size of an existing dog house converted into a chicken coop will most likely mean a small flock of three chickens. Will you keep the existing chain link perimeter fencing? Will you keep the concrete slab? Concrete isn't a permeable material, and chickens prefer the soil or ground to walk and scratch on, rather than concrete. It is best to break up and remove the concrete slab, replacing it with a more chicken-friendly layer of sandy soil.

Figures 2-3 through Figure 2-5 illustrate how to convert a dog house with kennel into a chicken coop and outside pen. All you need is time, muscle power, a few additional construction materials, and your creativity.

Step one: Dog house to chicken coop

In order to transition a dog house into a chicken coop, follow these tips:

- ✓ Place the new chicken coop (former dog house) on the outside of the existing chain link fence. Raise the chicken coop off the ground with cinder blocks or other material. Cut a precision hole in the chain link fencing and position it correctly near the new chicken coop with a flexible back door that opens and closes, and chickens have seamless access to their outside run.
- ✓ Modify the dog house for chickens with new doors that are smaller, a slanted roof, nesting boxes, a roost, and a manure box.
- ✓ Include a ramp for chicken entry into the outside run.
- ✓ Add feed and waterers inside the coop.
- ✓ Secure locks on all doors.

Figure 2-3 shows the dog house converted into a chicken coop. The chicken coop is outside the chain link fence.

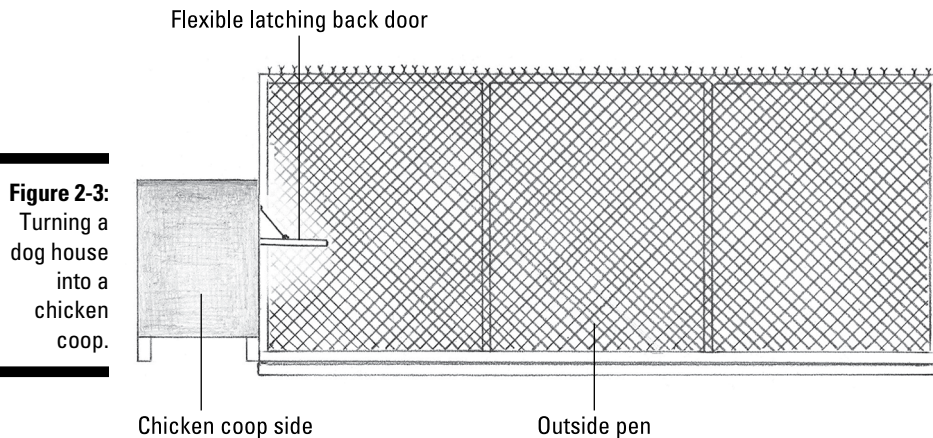


Figure 2-3:
Turning a
dog house
into a
chicken
coop.

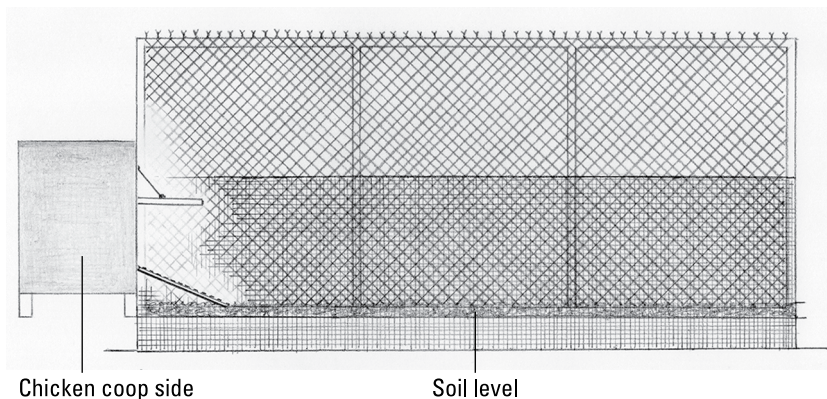
Step two: Kennel to outside pen

Every chicken coop needs an outside pen. Here's how to include an outside pen:

- ✓ Break up the concrete slab if you have one. Create something new with broken-up pieces of concrete for the garden, like a new concrete wall or a garden sculpture.
- ✓ Remove all concrete until you reach soil. Level the soil in the outside run. Dig down one foot below the soil level around the inside perimeter of the chain link fence.

Figure 2-4 shows an example of a former kennel with a new outside pen for the chickens.

Figure 2-4:
Creating an
outside pen
for chick-
ens from a
former dog
kennel.

**Step three: Modifying chain link fencing**

Put that chain link fencing to good use. Here's how to use it as part of the outdoor pen:

- ✓ Bury $\frac{1}{2}$ -inch wire mesh hardware cloth at least a foot below soil level, and foot it outward. This step helps to prevent predators and ground critters from digging and getting under the wire mesh.
- ✓ Carry that $\frac{1}{2}$ -inch wire mesh hardware cloth up three feet on the perimeter of the chain link fence.
- ✓ Frame the top of the chain link fence with wooden 2x4 boards. Cover and attach $\frac{1}{2}$ -inch wire mesh hardware cloth on top of the framework. Landscape in your garden style, and shade around your new chicken coop and outside pen, or secure a large piece of shade cloth over the top of your outside pen.

Figure 2-5 shows just how to include the chain link fencing as part of the outdoor pen. The inset shows how wire mesh protects your hens and their feed bucket from squirrels, gophers, rats, mice, and snakes that may try to gain access below the soil surface. Make a trench first, and then secure durable wire mesh by burying it at least 12 inches deep and toeing it outward 12 inches along the perimeter of your entire outside pen.

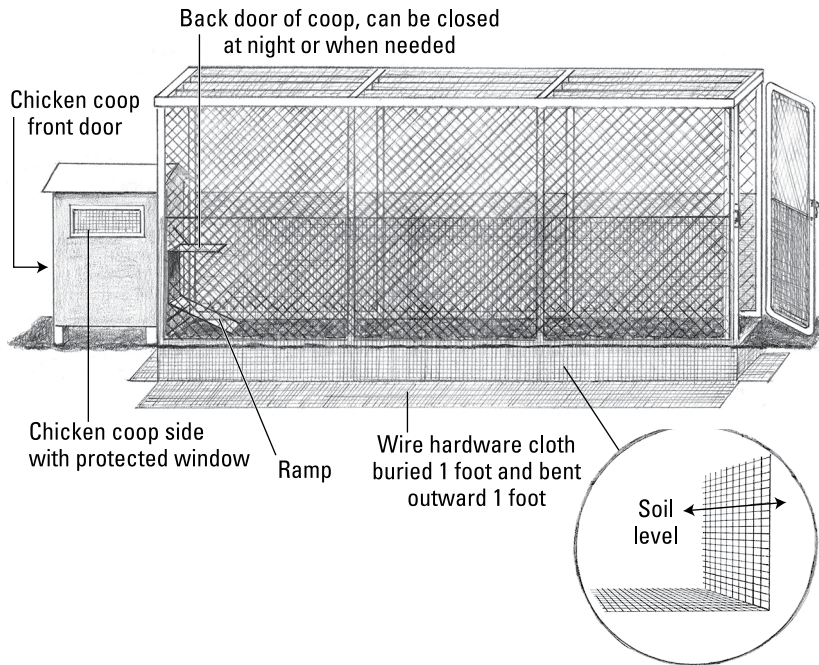


Figure 2-5:
Modifying
chain link
fencing for a
chicken out-
door pen.

Modifying other existing structures for chickens

If you purchase a prefab chicken coop, hire someone to construct it from scratch, or start with buying a garden shed, it will cost you a pretty penny. In the spirit of sustainability, you may want to look for something existing on your property that could be modified for a chicken coop. Consider modifying other existing structures for chickens.

Explore existing buildings or sheds on your property. Do you have a pile of wood in your garden that you've been saving for a project someday? These materials may be worthy of re-purposing for chickens.

Chickens are very forgiving. They can be housed or “recooped” in former horse stalls, run-down aviaries, or abandoned sheds, as options. Always consider the safety and health of your chickens when modifying these structures for your flock.

Clean and remove clutter to get started. Because many of these structures housed other animals, it’s extremely important to disinfect these structures thoroughly. Always use cleaning products that won’t be toxic to your chickens or other animals, such as non-chlorine bleach, Dawn dish detergent, Lysol, and Pine-Sol. Orange Guard is an organic and environmentally friendly insecticide that uses all-natural ingredients.

Small buildings and sheds

Small buildings and sheds are easy to convert. Could the back part of an old garage be transformed into a little coop with access to an outside run? Could you clean and modify an old shed on your property that’s being used for storage?

Is the structure in a good location on your property or in your garden? If not, can it be moved? Usually these structures have existing doors and windows that can be modified. Sometimes they even have electricity and plumbing in place, which may need only a little updating. Some may even include a dry room to store feed conveniently and organize your tools.

Horse stalls

Horse stalls were designed to keep horses safe, so with a little tweaking they can keep chickens safe too. Usually horse stalls have more open areas, such as the top half of the stall door and very top of the stall near the roof. Screen large areas with hardware cloth. Add nesting boxes, roosting bars, and a manure box. Hang your feed and waterers from the ceiling with a chain or “S” hook. If some type of automatic water system is already in place, modify it for chickens closer to floor level. Horse stalls are notorious for attracting rats and mice for feed, too. Make sure all previous rodent holes are sealed.

Child’s playhouses

A child’s playhouse or play structure can be converted into a smart chicken coop. A child’s playhouse is an ideal size for a small chicken coop, and it usually has a little character and detailing.

Do you have a forgotten child’s tree house or tree fort on your property? These structures are ideal because they’re usually built with good materials and are sturdy to hold active children. Carefully deconstruct these structures, and bring them down into the garden. Make sure new constructed roofs are watertight and sharp nails are removed.

Converting a playhouse into a coop

Your coauthor Bonnie and her husband bought a property with lots of potential and mature trees, but it was sadly rundown. It had a few treasures on it, such as an old child's playhouse close to the garage. It was a vintage child's playhouse, very solid with great wood and detailing. It was just in the wrong spot. With the help of a heavy-duty truck, the extremely heavy, long-abandoned child's playhouse was dragged down to a quiet southwest corner of the property. Bonnie saw the potential for modifying this cute playhouse into a perfect country coop for soon-to-be-arriving hens.

The child's playhouse was secured in its new location. Bonnie had a gardener at the time who was very handy with projects and helped modify the playhouse into a chicken coop. It was cleaned, sharp points eliminated, and damaged wood boards repaired. Next, the windows were covered with a strong, secure ¼-inch wire mesh hardware cloth and reinforced lengthwise steel rods that predators couldn't climb

through, yet the coop had ventilation. Shutters were made and installed outside for flexibility at night.

Doors, windows, and shutters should open from the outside so they don't take up valuable space inside the chicken coop. A front door was made that opened and closed. A back door was created from the back wall of the child's playhouse, now a chicken coop. The fun part was painting the accent trim of the new chicken coop and its front porch and adding chicken decor.

Nesting boxes were made and installed on the left side, a night roosting bar was mounted on the opposite side. The front and back doors had locking capabilities against predators.

This coop is a very successful chicken coop that has endured ten years of chickens and counting. It successfully blends well with the gardens and provides a versatile, safe, and happy home for her chickens. See this coop in the color section photos.

Former aviaries

Former aviaries usually have great structure and basics for housing birds. They can potentially have great detail and style. Make sure the aviary roof doesn't leak, the cage wiring is solid and strong, and the aviary has protection against drafts. Pay attention to recommended square footage for housing a flock of chickens in this type of structure.

Chapter 3

Preparing Yourself and Your Family for Chickens

In This Chapter

- ▶ Accounting for lifestyle and regional considerations when raising chickens
 - ▶ Considering what chickens have to offer children
 - ▶ Introducing chickens to your cats and dogs
-

Getting your garden ready isn't the only consideration when you're looking to introduce chickens into your daily life (see Chapter 2). You also need to prepare yourself, and possibly your family or other members of your household, for the responsibilities of backyard chickens.

Getting everyone in your household involved is important to maintaining a successful flock. Children and chickens are a great combination. Children can learn important life lessons from exposure to raising chickens in your garden. We cover that in more depth later in this chapter.

Consider your neighbors: Enthusiastic neighbors may want to pitch in and share the cost and responsibilities of raising chickens. We've heard of friendly neighbors going in together to raise chickens in their neighborhood.

Whatever your arrangement, know that chickens require daily care. Prepare yourself and whoever else is to be involved ahead of time to help smooth the transition from an empty yard to a bustling garden with free-ranging chickens. This chapter gives some helpful tips for preparing yourself for chickens and understanding the commitment involved with raising chickens.

Checking Out Chicken Chores

Chickens are living creatures and therefore need shelter, food, water, and protection every day. Hens also require a quiet place to lay their eggs. This section gives a snapshot of one day of caring for your chickens, followed by weekly, monthly, and biannual suggestions and gives details on the oh-so-important chore of collecting eggs.

Keeping up with caring for your chickens



If you're going to be gone on vacation for a few days or for an extended period of time, these chores still have to be done. Make sure you have a responsible chicken-sitter, just like you'd make arrangements for your other family pets. Keep your chickens contained to their chicken coop and adjoining secure outside pen, while you are on vacation. Do not let them free-range.

Here's a list of daily chores for raising chickens in your garden:

- ✓ Open your chicken coop in the morning. Bring your kitchen compost container with kitchen scraps with you down to your chicken coop. Kitchen scraps go to the compost bin daily along with your chicken manure.
- ✓ Feed your chickens.
- ✓ Briefly look at your chickens for general health and well-being.
- ✓ Check the waterer, or water system, to make sure your chickens have fresh water.
- ✓ Clean the manure box by skimming and scooping manure into your muck bucket. A *muck bucket* is a bucket that is specifically, and only, used for transporting manure and soiled chicken coop bedding.
- ✓ Take the muck bucket and kitchen scraps to your compost pile. See Chapter 1 for details on kitchen scraps and composting with them.
- ✓ Collect eggs every day, preferably at least twice a day, preferably at the same time. Keep a journal of egg count, if you desire.
- ✓ Check the chicken coop thermometer when it's extremely hot or extremely cold outside. When these extreme temperatures occur, take appropriate action to make your chickens more comfortable (see Chapter 2).
- ✓ Open up the coop to the outside pen, or allow chickens to free-range in your garden, if this is your normal routine. Daytime rituals vary by season and regional weather conditions.

- ✔ Provide treats as a special daily ritual sometime during the day.
- ✔ At dawn and dusk, close up your chickens once they are back in their coop and up on their roost for the night. Close up all outside doors and gates securely, whether your chickens were in their secure outside pen or ranging in their runs or zones. See Figure 2-2 for an illustration of a chicken coop back door that can close and secure chickens in the coop at night. Remember to give them ventilation, or air circulation by leaving a vent or wire-protected window open. Night rituals vary by season and regional weather conditions.
- ✔ If any of your chickens fail to return to their chicken coop, call them and/or look for them until you find them. If you have trained your chickens to come with a pet clicker, use that. See Chapter 9, Chickens Can Be Trained. If by chance a hen has been injured, or a surprise attack has frightened your flock, become very quiet to listen for them, and call their names. If they are able, they will make soft noises responding to you.
- ✔ Take the feed bucket back to the storage room, and store it in a clean metal utility/garbage can.

Here are some weekly chores to consider when keeping chickens:

- ✔ Turn over compost pile, either manually with a pitchfork or giving your chickens liberty to turnover and aerate your compost pile.
- ✔ Troubleshoot any fencing, garden irrigation, or predator evidence. See Chapters 5 and 10 for details.
- ✔ Clean and disinfect chicken waterers if they are dirty and/or forming green algae. Algae forming occurs in warm weather.
- ✔ Rotate fresh chicken coop bedding if the bedding is dirty or getting depleted from bedding rotation. Chapter 2 gives details on how to rotate fresh bedding.
- ✔ Engage in some form of ongoing rodent management. Where there are chickens and chicken feed, there are rodents. We discuss rodent management in Chapter 11.

Here are some monthly chores to consider:

- ✔ Buy feed at the feed store. You may need to buy it more often. We always recommend providing fresh feed for your chickens. One metal utility garbage can hold 100 pounds of chicken feed comfortably. Keeping feed fresh for your chickens depends on how big your flock is, and what kind of storage accommodations you have.
- ✔ Clean the chicken coop, dusting, sweeping, and removing all bedding. Disinfect if your coop has a parasite problem, visible on your chickens or around bedding. Freshen coop with new bedding.
- ✔ Clean the outside pen by raking, removing clumps of manure. Level the outside pen floor.

- ✓ Mix in finished humus from composting into one of your needed garden beds. See Chapter 2 for composting information, and Chapter 5 for adding finished compost or humus to your garden.
- ✓ Take care of any chicken coop repairs or parts that need to be replaced from wear and tear.
- ✓ Implement any seasonal adjustments as needed when moving into warmer and cooler temperatures in your climate.

And, here are some twice-a-year chores to keep in mind:

- ✓ Deep clean the coop. Remove manure box, roost if you can, and wash down, scrub, disinfect, and let dry in the sun.
- ✓ Worm your chickens at least twice a year, spring and fall are good times. See Chapter 11 for more worming information, and Chapter 6 for plants that have chicken deworming qualities.
- ✓ Assess your chicken flock. Will you be adding more hens? Ordering baby chicks? Do you need to add on to chicken coop? Do your free-range chickens need more outside runs?

Getting eggs-actly what you want: Collecting eggs

Eggs are a big part of owning chickens. They come in different colors and sizes and may have some imperfections. It's important to collect them each day and to know proper handling and storing techniques.

Each chicken breed has specific egg color characteristics. Some of your hens may lay eggs that have speckles or freckles or slightly different color tones, helping you distinguish one chicken's eggs from another's. See Chapter 2 for information on egg differences among breeds.



A fertile egg doesn't taste any different from a nonfertile egg. An egg's taste comes directly from what the hen eats. Fertile eggs don't have any additional health benefits over nonfertile eggs.

Hens do not need a rooster to lay eggs. Hens need a rooster if you want fertilized eggs for eating and/or the capability of hatching eggs. Eggs will not be fertile unless there is a rooster kept in a flock, or a rooster is given access to a particular hen(s) for breeding purposes. As we mention in Chapter 9, one

rooster to twelve hens is a good rooster to hen ratio in a flock. Roosters have the ability to mate numerous times with several hens a day. Rooster's sperm can be stored and remain viral in a hen's oviduct pouches capable of fertilizing eggs for up to 10 to 14 days.

Collect fertile or nonfertile eggs for eating at least twice a day or more if possible, and store them immediately in the coolest part of your refrigerator, not in a refrigerator door. In hot climates, fertilized eggs can start developing at 85 degrees Fahrenheit. Look to Chapter 1 for more information on handling eggs.

Eggs from young hens are tiny but perfectly good. As hens mature, their eggs get larger and larger until they're the standard size that their particular breed lays. Table 3-1 lists some egg abnormalities, particularly prone to pullets (young hens) beginning to lay. With time, hens usually work out these egg glitches on their own.

Table 3-1 **Some Common Egg Imperfections**

<i>Name</i>	<i>Description</i>	<i>Cause</i>
Blood spot	A blood spot in egg	Piece of blood vessel broke when egg was being formed, but before shell was added. Sometimes it can be lack of vitamin A in the hen's diet, or it can be hereditary. Eggs look unappealing, but are good, and fine to eat.
Double yolk	Two yolks in one egg	Two mature yolks dropped from ovary at the same time. Egg is fine and good to eat, even prized.
Shell-less egg	An egg covered only by membranes	Malfunction of hen's egg-laying mechanism. Egg was rushed through the process prematurely. Can be from beginning laying pullets, stress, or vitamin D deficiency. Do not eat.
Wrinkled egg	Outside shell is ridged or wrinkled	Hen was roughly handled or two eggs being formed in oviduct at the same time rubbing close to each other. Egg is fine to eat.
Yolkless egg	No yolk within egg	Can be from beginning laying pullets. Something triggered oviduct other than a yolk to start the egg process. Do not eat.



When in doubt about an egg, do *not* eat it. Be cautious of eggs that are cracked, smelly, or extremely dirty.

Working with City Rules and Neighbors Needs

You know that you're okay with owning chickens, but what about the city you live in or neighbors who live near you? Are they ready and willing to accept these new members? This section covers city and county ordinances so you can be sure to follow the rules of where you live. We also help out with neighbors to ensure a happy relationship.

City/county ordinance compliance

Before you get any chickens and buy or build a chicken coop, you must check with your city and, in some cases, your county. Very precise codes, zoning, and compliance regulations are in place; you must understand and follow them to raise chickens. Your city or county will tell you how many chickens you can have, whether or not you can have a rooster, whether you can have other farm animals, whether you need permission from your neighbors, and any other specific criteria regarding raising chickens.

A good place to begin is with your property's zoning within your city or county if you are not within a city. Here are some questions to be sure to ask:

- ✔ Ask about the zoning classification of your property, the official document of what is allowed for that particular zoning. Look for information on livestock and farm animals.
- ✔ Ask specifically if poultry is allowed. If so, the maximum number you are allowed to have. Does the sex of the birds matter? Are there regulations if raising poultry is going to be a business venture? If there are laws on housing, pens, and fencing to contain them. Do you need a specific permit to construct these. Does it need to be inspected?
- ✔ Do you need to get written permission from neighbors? Are there other regulations that apply to raising poultry you specifically need to know. For instance, are free-range chickens allowed?
- ✔ If you are renting, and do not own the house, first contact your landlord for permission, and any restrictions such as chickens which might not have been covered in a lease.
- ✔ If you are in a gated community and/or homeowner's association, you must also check with them on the rules and regulations of raising chickens.
- ✔ Do I need to contact the county? If you don't live in a city, your zoning might fall under the county jurisdiction, and you would contact them regarding your zoning classification and specifics.

- ✓ If your city or county does not currently allow raising poultry, find out the procedure for amending or requesting zoning variance approval. The popularity of chickens has pressured many cities to amend their laws and reverse zoning laws.

After you get the okay from your city to maintain chickens, you need to check on the rules regarding adding a new structure, such as a chicken coop, to your yard. Your city zoning department will tell you precisely what's allowed for your parcel number and property. Not researching and knowing the zoning guidelines beforehand could cost you a lot of time and money. For instance, if your property isn't zoned to have chickens, the city could enforce removing your chickens, and possibly disassemble your coop.

You also have to comply with specific building regulations on property side, rear, and front setbacks. Cities have specific requirements about where sheds and other small buildings, such as chicken coops, can be located on a property, usually taking into account side and rear setbacks. If you can't physically visit your city zoning, code, and building departments, most likely they can easily send you an e-mail with all the information you need.

Fencing may also be regulated, including how you can fence your property, and with what type of materials. Fencing can be prohibited or regulated in some areas to protect wildlife migrations.



Thoroughly research all specific regulations and coding regarding chickens for your city and county. It's not wise to take a friend or a neighbor's word for it. Ultimately you're responsible.



Some cities require written permission from your neighbors to raise chickens in your garden. You may encounter certain restrictions on having roosters as well, because they can be noisy with their crowing early morning and throughout the day. You should try to be considerate of your neighbors when thinking about getting chickens, building a coop, managing manure, and so on. Read on to find out more on handling chickens and neighbors.

Rural rules

If you're in a rural setting, research your codes, regulations, zoning, and compliance details. Sometimes rural properties have fewer ordinances. On the other hand, if you're venturing into serious poultry pasturing or raising

livestock in large numbers, you'll probably encounter water runoff restrictions, water pollution regulations, and manure and waste management compulsory regulations.

Know thy neighbor

Suppose you did your city research (see the previous section), and you're able to have a small flock of chickens, and perhaps you have no restriction on roosters either. It's always a good idea to be neighborly and mention what you're planning, even if your city doesn't require you to notify your neighbors. If you have finicky neighbors, it helps to be upfront about your chicken venture, rather than surprising them.



When neighbors complain about chickens, it's usually because of preexisting tensions between neighbors. Be aware that raising chickens can exacerbate and heighten neighborly tensions.

Following the law

Pay attention to mandated city setbacks from your house, your neighbor's house, fences, property lines, and so on. Few things are more frustrating than building your dream chicken coop and finding out you have to move it four feet to the right.

Figure 3-1 illustrates a bird's eye view of a chicken coop in a model garden setting with a perimeter fence and a neighbor's house next door. This figure gives you a good idea of how to create harmony with your chickens and your neighbor's space. Your coop, outside chicken run, and compost area is situated away from your neighbor's house. Thoughtful landscaping muffles noise and visibility of your chickens.

You may have a fussy neighbor who isn't going to be pleased no matter what you do. As long as you adhere to your city/county regulations regarding raising your chickens, you're within the law. Take into consideration your neighbors and what they may be objecting to. Consider making some consolation changes to help smooth things over.

Flock together

We have read about a close group of adjacent neighbors who banded together and opened their properties, removing their individual fences, and creating one large garden space.

Within this space they garden together and free-range their communal flock of chickens. This set-up works well with sharing responsibilities and balancing vacation and travel time.

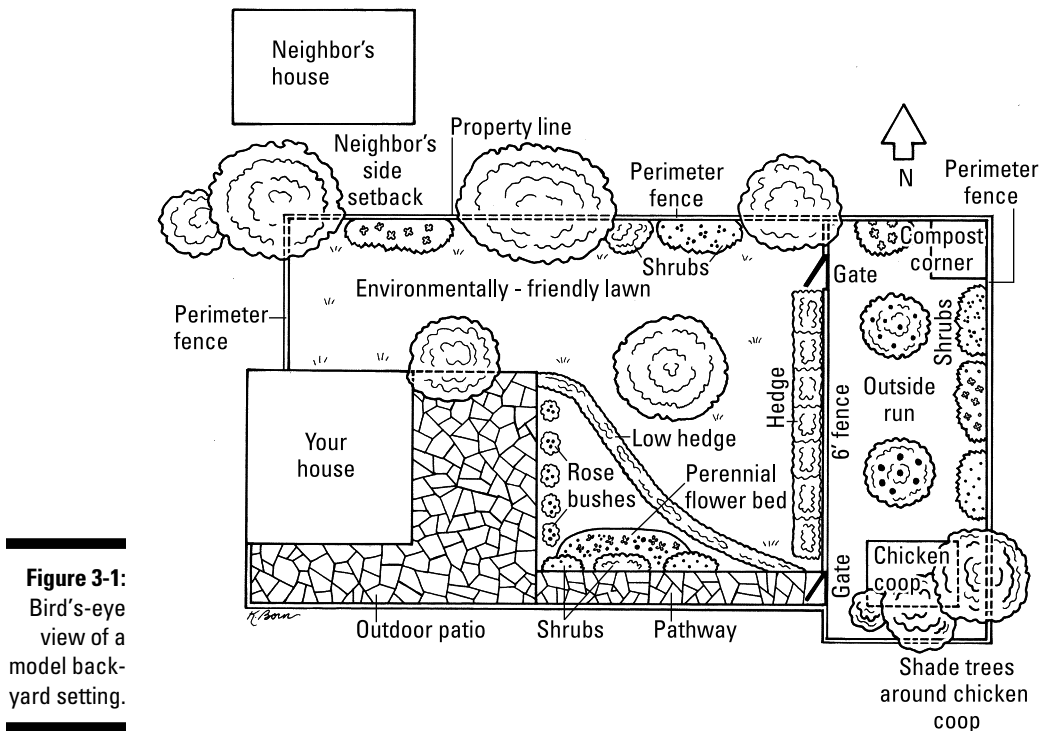


Figure 3-1:
Bird's-eye
view of a
model back-
yard setting.

Being considerate

Balancing chickens and neighbors is all about consideration. You know that chickens create manure, and chicken manure is something that has to be managed. Chickens and manure not well managed can be smelly, attract flies, and sometimes be undesirable. Even though you may not have a rooster, hens can squawk and make loud noises. Don't place your chicken coop under your neighbor's window — or your own. Position your chicken coop and outside pen in consideration of others.



TIP Make it a practice to share a dozen eggs regularly with your neighbors. They'll appreciate the fresh eggs, and it helps with neighborly relations. They may enjoy your chickens so much, they'll want to get a flock of their own, or care for them when you're out of town.

Being cautious about roosters

If you're planning on getting a rooster, or find you have a rooster in your mix of chicks and plan on keeping him, do the neighborly thing, and ask your neighbors first. Mention to them your intention of keeping him. Ask whether they hear him, and whether they mind if you keep him permanently.



We recommend strongly against raising roosters in any type of suburban and urban residential neighborhood areas. You don't need roosters for a healthy and happy flock. The trouble roosters can cause with irritated neighbors can often exceed any benefits. A rooster is very loud and can be annoying early in the morning, and throughout the day. A rooster crows when he hears something unfamiliar in the yard, just like a dog barking to protect its domain.

If your neighbor is an acre away in the country, the guidelines are different. Roosters crowing give ambience to the countryside that city folks just don't appreciate. Use your best judgment, and think about how you'd feel if the tables were turned.

Finding a Fit For Your Lifestyle

Chickens are very hardy and adaptable to many types of environments. How do chickens fit in with your lifestyle? Maybe you're a city slicker in a very urban environment with little spare time. Perhaps you're part of a trendy family in the 'burbs growing your own food. Maybe you're a true country homesteader and love working your land. Quite possibly you're an interesting combination of these three examples. This section covers how raising chickens may fit into your lifestyle, using these three different scenarios.

City urban

Chickens can thrive in a city environment. As an extreme example, consider the family who raised two chicks to mature egg-laying hens in their Manhattan high-rise apartment (in the shadow of the Empire State Building). *The New York Times* covered this family's story in 2007, noting that, according to the Department of Health and Mental Hygiene, roosters aren't allowed in New York City, but chicks and hens are. Always check first with your city's codes, zoning, and regulations regarding raising chickens.



In cities, space is always a premium. Consider bantam chickens, the smaller-sized chicken breeds that require less space for a coop and an outside run. Smaller chickens can mean smaller size eggs, although some bantam chickens lay large eggs relative to their body size. Perhaps you might consider having 6 bantam chickens versus 3 large (standard) hens.

A pint-size flock of two to three bantams may fit comfortably in a narrow side yard, or you may want to trade your postage size lawn for a coop and outside pen. Also consider whether you have a space that could be cleaned up by the alley or off of your back porch. Chickens are entertainment and a fresh food source, all in one.

Chickens can free range in an urban environment if they are permitted first under zoning, and second, in a more limited way than in a suburban or rural environment. City lots are small, but can accommodate small flocks under close supervision. Community gardens, thrilled with working together growing food are joining forces and including a community chicken flock.

Here is what you might expect if you were raising chickens in a city with an urban lifestyle.

Perhaps you work long hours, eight hours or more each day. Because you aren't around much during the week, and your lifestyle raising chickens may be one of a more contained chicken flock in a more protected coop and outside pen set-up. On weekends, when you're relaxing with the Sunday crossword puzzle, you can let your chickens out to free-range when you have more time. You are also a gourmet cook, and when you have the time to cook and entertain, your tasty fresh eggs make it extra special.



Don't be caught off-guard. Even in the city, plenty of predators are interested in your chickens. Predators preying on chickens can be found in a city environment, just as much as in a rural environment. Raccoons and dogs are main predators in a city environment.

Suburban chic

Perhaps you're a modern family with two children and a family dog. You fell in love with your home because it has space for ornamental and vegetable gardens. You've caught the bug of sustainability, growing as much of your food as you can, and you experiment with all kinds of heirloom seeds. Nothing makes you happier than spending as much time in your garden as you can. Next year you want to espalier fruit trees.



Espalier is the art of creating a design with a living tree, shrub, or vine on a flat plane. The design is beautiful in appearance, space saving, and beneficial to the plant in that it receives more air circulation, sun, and warmth. Most espaliered designs are supported with wire on a fence, building, trellises, or solid structure.

You designed your garden for relaxing, entertaining, and eating what you grow from your garden. Raising chickens in your garden seems like the next logical step, and your children are eager to help. Someone is usually home during the day, and weekends can be busy with entertaining friends.

You're an innovative, creative type and can further fit a chicken coop and chicken runs into your garden design. Your garden is mature to the point where your chickens have shelter, food, and protection when they free-range in your garden. Your children consider their chickens as family pets, and are always willing to check on them and give them treats. You've trained your dog to be a protector of your chickens in your garden. Your entire backyard is fenced in. Your chickens and chicken coop are a functioning integral part of your garden.

You've calculated your garden space and you easily have room for eight hens (see Chapter 2 for details on making these calculations). You have plenty of room for large (standard) chicken breeds that are docile and people-friendly. Because you're new to raising chickens, you want to play it safe and start first with five hens. Five hens will also cover the fresh egg needs for your family, and entertaining.

Country homesteader

Perhaps you've given up what was your "rat race" and now are living your dream, living on a small farm with acreage. You have two dogs, two horses, and a yearning for more livestock. First, you started with a small mixed herd of goats, and found out you have a knack for making artisanal chèvre goat cheese.

Your neighbor introduced you to the Barnevelder poultry breed, and you love their eggs. You are curious about this breed, and research it more. You decide you are going to add a flock of Barnevelder hens to your menagerie.

Originally an old Dutch poultry breed, it's less common than other poultry breeds today. Barnevelder hens lay popular dark brown eggs. It's a hardy breed, slow growing, moderate layers, and great foragers. These chickens are dark feathered and blend in with their environment. They're also a docile breed. You feel the Barnevelder breed will pasture nicely on your farm, and you love everything about their eggs. You like the idea of raising the Barnevelder breed on your farm, and supporting the comeback of this breed.

You start with a 12 chicks initially. When these chicks reach maturity as laying hens, you plan on implementing a special breeding enclosure close to the barn, along with the addition of one lucky Barnevelder rooster.

Next, you build a mobile chicken coop that looks a little like a “gypsy wagon” for use when they pasture. A mobile chicken coop is a chicken coop on wheels. See Chapter 4 for more information on mobile chicken coops. Your hens use a ramp to enter and exit the mobile chicken tractor to lay their eggs in the morning, and return at night for safety. Your trusty farm dog checks on your hens periodically throughout the day. If predators prove to be a problem, you may implement temporary electrical fencing.

Noting Regional Variables that Make a Difference

Weather and hardiness zones are examples of regional variables that have an impact on raising chickens.



We always suggest contacting your local feed store when in doubt about anything that comes up with raising your chickens. You can find very good online chicken websites, too, but they may not be local. Feed stores see their customers every day, know what’s going on in the community, and can answer questions on climate and growing zones. They have many customers just like you, who are raising chickens in your area.

Hardiness zones

Across North America are 11 hardiness zones designated in what’s called the USDA Hardiness Zone Finder. If you don’t know your zone, you can find it by inputting your zip code at the website of the National Garden Association, <http://www.garden.org/zipzone/>. Each zone is ten degrees warmer or cooler than its adjacent zone.



This zone finder is a great tool for knowing your regional growing area. It helps you compare your garden climate with the climate where a plant is known to grow well. Following compatible plant zones with your individual zone is great gardening.

Some regions have longer growing seasons than others because of freezing temperatures and frost. Have no fear; each region has plants that thrive and flourish particular to that area. Every hardiness zone has zone envy — plants that others wish they could grow but can’t. For example, most types of rhododendron and gunnera favor the wet and shady regions of the Pacific Northwest, while olive trees and drought-tolerant succulents do better in arid Southern California regions.

Long and short growing seasons also influence how you free-range your chickens. Chickens are adaptable to a wide range of temperatures from 40 to 85 degrees Fahrenheit (and tolerant to temps above and below that range as long as accommodations are made). But when weather is cooler, you need to have your chickens in a more protected environment, like their coop. Chickens are less likely to forage well in snow, ice, and freezing temperatures. On the other hand, in temperate climates (such as the authors' California), free-ranging your chickens year-round is the norm.



If you live in an area with extreme temperatures, select chicken breeds that favor the cold or tolerate the heat. The country of origin of a chicken breed is a good indication of what type of weather a breed will thrive in. In Chapter 2, we suggest some of these breeds.

Individual plants can react differently in different regions of the country, too. What may grow well in one region can be invasive and problematic in another region. Before you plant unfamiliar plants, check your library, local extension offices, cities, and water districts for any listings of invasive plants for your region.



Invasive plants are usually non-native plants that are introduced and planted in an area. Optimal conditions for this plant allow the plant to reproduce prolifically, sometimes choking and taking over an area. Invasive plants can be hard to curb and eradicate once started. For example, some varieties of bamboo are described as invasive.

Extreme weather

You know how extreme the weather can be; it's on the news nearly every day. Extreme storms and "once in a century" weather events are becoming more and more commonplace. How does this extreme weather affect raising chickens? You have to give them even more protection, and like your other family pets, move them out of the danger area ahead of the situation, when you evacuate yourself.

Prepare your flock for firestorms, hurricanes, tornadoes, Noreasters, and floods by having an available transportable coop or container, and evacuate your chickens if possible, with your family, family pets, other livestock, and essentials. Bring emergency feed, water, and your chicken first aid kit. We list ingredients for a chicken first aid kit in Chapter 10.

Chickens have very little means of protecting themselves. Chickens can't take dampness and wetness for very long before getting sick. Also, chickens can't take exposure to extreme elements for any length of time.

If you live in a habitual flood zone, situate your coop on high ground on your property and elevate it off of the ground. Be realistic too. Weather forces that take down a house, school, or barn will probably take your chicken coop, too. Any weather condition that threatens human life will threaten chickens too.

Children and Chickens are a Natural Mix

Something about chickens fascinates children. Chickens are relatively small in size, generally not aggressive, communicate in coos and clucks, and can be trained to eat treats out of your hand. Maybe the admiration is reciprocal; chickens may be as curious about children as children are about them.

If you have children, and you're thinking of getting chickens, we encourage you to take the plunge after considering the following:

- ✓ Make sure you're properly zoned for chickens and you can provide the basics of proper food, shelter, and protection. Be sure that you and your children have the time for chickens, and take raising chickens responsibly.
- ✓ Research what breeds of chickens would make the best flock for your family. In Chapter 2, we suggest that Cochins, Houdan, Orpington, Polish, and Silkies are good for children. Most of these breeds are wild and wacky in their feather appearance, yet calm and docile in nature. The smaller bantam breeds are a nice size for small children.

Most of the large (standard) breeds are docile and children-friendly too. These breeds are just a little bigger and heavier to handle, and may be too heavy for very small children to pick up. Read up on chicken breeds with detailed descriptions of life spans and general traits to find the best breed for you and your children. It's a personal preference.

- ✓ Be reasonably sure that your children would treat your new hens as pets and with loving care. Make sure your children know that chickens aren't toys or playthings that can be dropped, tossed, and rough-housed. They're living creatures — hardy yet delicate.



Check out *Chicken Health For Dummies* (Wiley) by Julie Gauthier and Rob Ludlow for more details on health safety when dealing with chickens.

Unless you're already experienced with roosters, we suggest you raise hens around children — and not roosters. Roosters can be unpredictable, and sometimes can be overly protective about their hens. Roosters can be aggressive and can overpower children — or some adults for that matter. Although roosters can be beautiful and magnificent in plumage, they have their own

agenda around the coop. Don't forget about their daybreak crowing, sharp leg spurs, and aggressive territorial nature. Generally speaking, roosters aren't for children.

Children and chickens are a natural mix. Hens can teach children about

- ✓ **Responsibility and routine.** Hens are living creatures, and must be cared for every morning and night. Hens must have feed and clean water every day. Their manure must be cleaned out and properly managed. In winter, and in bad weather, they must be protected from the cold, wet, drafts, and dampness. Chickens entertain themselves easily, and can thrive in a safe protected environment. They can't however, be neglected.
- ✓ **Where food comes from.** Children may observe a hen laying an egg, and see what she goes through to lay that egg for them. Children may have the experience of holding a just-laid egg, still warm from a hen's body. A child may have the duty of collecting eggs every day as one of his or her chores. Children that grow up with a garden, either at their school or right in their backyard are being exposed to where their food comes from, and how it grows. It is yet another example when they experience hens laying their eggs.
- ✓ **Love.** If hens are handled kindly from an early age, they can easily bond and become tame and affectionate with caretakers and others they see all the time. If allowed to free-range in your garden, chances are they'll follow your children out of curiosity and a desire to be close to them.
- ✓ **Distinct personalities and traits that become more pronounced over time.** Let your children name their hens, and follow their personalities, and observe their traits. People aren't all the same, and neither are chickens.
- ✓ **Sharing with others.** Children can learn the lesson of sharing their personal eggs with their friends and their families, their teachers, and relatives. They have worked hard to take care of their chickens, and share their eggs with others.
- ✓ **Bonding time.** The time spent with chickens can be a special time that you and your children share and spend together taking care of them. Watch how your children interact with the hens. Hens are so entertaining and fun. Hens are more entertaining than TV or video games!
- ✓ **The circle of life.** Especially if you start your flock from chicks, children see before their very eyes chicks growing up to be mature hens. Mature hens began to lay profusely. After a few years, your hens start tapering off on their egg production as they get older and older. Children see older hens that can't jump as high, or run as fast as the younger chickens. Children can learn about loss and death through chickens. They may even experience a hen dying of old age or from a predator.

Show your children the best way to pick up your hens, and practice this technique until your children are comfortable. Never pick up a hen from her neck, wings, feet, or legs. Bend down, put both hands firmly, but not squeezing, over the side of her main body, keeping her wings close to her body and unable to flap. Pick her up gently, and hold her close to your body, and under your arm. When putting her down, keep her wings still against her body, and gently lower her to the ground. Never drop her. Hens are hardy, but also fragile. If you're unsure how your child or children will react with hens, always supervise them.

Depending on the age of your children, there are certain common sense guidelines you should follow and explain to your children. Due to potential disease reasons, children under age five should not be handling poultry. Manure collection and management should be a responsibility for adults, not for children. Touching fresh manure or walking barefoot in the garden should also be discouraged.

Always wash your hands

It's important for you and your children to always wash your hands with soap and water right after touching live poultry, or anything in the chicken coop habitat. Contact with live poultry (chicks, chickens, ducklings, ducks, geese, and turkeys) can be a source of human salmonella infections.

Salmonella germs are culprits often in the news about contaminated food outbreaks that cause human illness and death. Salmonella germs can cause diarrhea that can be mild, severe, or life-threatening. Simple soap-and-water hand-washing is a good habit to follow after being around your poultry. If you don't have access to soap and water, use a hand sanitizer until you're able to wash your hands thoroughly.

Chicks, ducks, and other live poultry can carry salmonella germs and still appear to be healthy and clean. Salmonella germs are shed in poultry droppings and can easily contaminate their bodies and their living environments.

Parents should supervise hand-washing for young children. In fact, children under five

years old, seniors, or people with weak immune systems shouldn't handle chicks, hens, or live poultry at all.

Even though your chickens may be family pets, don't bring them inside your home, bathrooms, and kitchens where food is prepared or stored. Don't wash poultry equipment in your kitchen sink. Don't let your children snuggle or kiss your poultry to their mouth or lips, or eat and drink while they're around live poultry.

It is extremely unlikely that you would get sick from your backyard chickens. Always practice safe food safety, and practice common sense and poultry management techniques we have discussed throughout the book. Keep your chicken flock healthy. Keep their coop clean, and properly handle chicken manure by composting. Always wash your hands after collecting eggs and handling chicks or chickens, waterers, feeders, and other poultry equipment. Always wash your children's hands, after they have handled the chickens.

Adapting Chickens with Family Pets

You may have pets already as part of your household. Many people adore their pets and consider them part of the family. Pet owners spend millions in food, grooming, care, and accessories.

The following sections outline important points to consider when introducing chickens to pets you already own. Note that we're generally referring to cats and dogs. The majority of family pets are cats and dogs. If you have something else, like a hamster or snake, it should have a contained home of its own, and not be near your chickens.

Pets can be friends

Just like when Mom and Dad bring home a brand-new baby sister or brother, everyone goes through a period of acclimation and adjustment to the new family member. Don't be surprised by some jealousy and temper tantrums on the part of your current pets. All will be well in a few weeks, if not days. Close supervision is essential during this time.

You want your cat and dog to get along with your chickens and integrate well. Your family pets enjoy your garden landscape and outdoor living as well. Introduce your family pets slowly and carefully so that your chickens are protected. Either contain your chickens in their enclosed secure outside pen, or hold them in your arms when first introducing your them to your cat or dog. You need to be very cautious, as you don't know how each of them will react to one another.

Livestock guardian dogs

Dogs can be great protectors of your chicken flock. In fact, it doesn't have to be a farm or rural setting. Dogs can be used in urban areas and backyard gardens. Like chickens, they have specific space and care requirements.

Livestock Guardian Breeds, <http://www.lgd.org>, are specifically Great Pyrenees, Anatolian Shepherds, Akbash, and Maremma.

They're usually big dogs with big hearts. Among these breeds are varying temperaments, and some are better suited for wide-open pastures, while others do better in an urban garden settings.

In the case of a predator, they'll fight and defend a flock of chickens with intimidation and aggression. Some of these dog breeds can't cross over and be a family pet too. However, some of these breeds can be suitable as a family pet, and a working livestock guardian. Research thoroughly the particular dog breeds you are interested in getting or rescuing. These working dogs are loyal protectors and must sleep closer to the livestock. A lot depends on how they were raised and treated throughout their life.

Family cats are more curious about other things in the garden than chickens. If you let your cats in the garden, the garden is their territory, too. Garden cats are more interested in catching mice and gophers than stalking chickens.

Introducing family dogs to chickens for the first time can be tricky. It's ideal if your dog has grown up with chickens since it was a puppy. Some dog breeds are innately bird dogs, and will want to chase after chickens. These dogs see chickens as a game, and can be overzealous when their natural instincts kick in.

We've often heard of a family dog (who never hurt a fly) being left alone with the chickens, and when natural instincts kicked in, uncontrollably killed the entire flock. A real family tragedy. Your dog can be a great protector for your chickens in your garden setting, barking and fending off potential predators. However, use common sense, and don't take chances when it comes to your chickens and your dog(s). Being overly protective regarding your chickens is best.

Our suggestion is to be patient with your dog. Introduce your chickens in a protected situation such as in their secure outside pen enclosure. Start with close supervision. Graduate to holding your chicken, with your dog contained in the yard, and see how the animals all react.

Hopefully your dog has "heel" and "stay" manners, and is obedient to you. When you begin letting your chickens free-range in your setting, keep your dog on a leash or otherwise restricted. When your dog becomes accustomed to your chickens, your dog will start paying attention to things other than your chickens.



If incompatibility continues, with your dog harassing and chasing your chickens, you may want to look into professional dog training assistance. Sometimes it just takes a little time for your family dog to understand the integration of chickens into his world. Be patient with your dog, giving him time to understand right and wrong regarding chickens.

You have to be open to the possibility that based upon the temperament of your dog, free-ranging chickens in your garden may not be a viable option. Your dog is going to win every time in a tragic way.

Pets can be foes

Nothing is more tragic than having your family dog kill one of your beloved chickens. Sometimes a family dog doesn't get it and won't stop stalking chickens. A family cat may eat or harm chicks if given the opportunity, but usually won't attack mature chickens.

Unfortunately, in these situations, you end up having to choose between having your dog or cat or having your chickens. This type of decision is a very emotional one, especially if you've had your pets for a long time.

You may have family pets that acclimate just fine with your chickens. However, it is important to recognize that your neighbors' pets or rogue pets may find their way onto your property and have the potential to harm or kill your chickens. When this happens, these pets are called predators. Dogs are one of the top predators of chickens. Be aware that feral cats can be potential predators of chicks and chickens as well. We discuss in detail chicken predators in Chapter 10.

Chapter 4

Creating Your Space for Free-Range Chickens

In This Chapter

- ▶ Understanding your property and how it complements free-ranging chickens
 - ▶ Deciding which free-range chicken option is best for you
 - ▶ Considering a self-contained chicken hamlet
-

In this chapter, we touch on the many variations of free-ranging your chickens. Just like everyone has his or her own lifestyle, you'll have your own preference on raising chickens and how to free-range chickens based on your own setting.

Before you can assess which method of free-ranging chickens may work for you on your property, it's important to take a close look at your space. In this chapter, we show you how to look at the lay of your land to figure out your free-ranging options. From there, we point out the many variations of free-ranging so you can discover what's right for you. Finally, we describe a chicken utopia and how you can create one of your own!

Looking at the Lay of the Land

Ideally, you want your chickens in a quiet, sunny location that's also convenient and accessible for daily chores. You don't want it situated too close to your home or your neighbor's home. It shouldn't be in a high-wind area, a low, drafty spot, or a very noisy area. It should also have access to shade. If you're on a farm or homestead, you have more space and more choices.

The lay of the land is how your property is laid out and includes elements such as open spaces, sunny areas and shaded areas (including sunlight

changes with the traversing sun and seasons), any low spots, narrow spaces, heavy brush areas, trees, where your house is positioned on your property, and where your neighbors are located. Take into consideration the compass directions of your front and back yards. This gives you an idea of where your sun exposure is on your property and how it might change throughout the year and seasons. A north area of your property might be shady in the winter yet full sun throughout the summer. The front yard isn't off-limits either; we know of chicken coops tastefully located in a vibrant front yard.

All these elements help you in deciding where to place your chicken coop and secure outside pen and what type of chicken free-range method is best for your environment. When assessing the lay of the land, also consider your personal preferences raising chickens, your lifestyle, and your garden style.

Working with permanent elements

Permanent elements are the elements that you can't change — or, if you could change them, it would be very difficult and costly. You have to work around these elements when considering your chicken coop and free-ranging possibilities. When you're getting started, we recommend making a topographical copy of your property. This type of drawing can be generated by certain types of professionals such as architects, surveyors, and landscape designers. If this option isn't feasible, simply sketch the elements that are permanent. The spaces that are left are the usable space in your landscape.

Here are some examples of permanent elements that may be found on or near your property:

- ✓ House and garage
- ✓ Property line
- ✓ Driveway
- ✓ Property setbacks
- ✓ Mature trees
- ✓ Location of neighbor's house
- ✓ Other types of buildings not on your property but close enough to affect your property. Example, a McMansion home towering over a tiny cottage bungalow.
- ✓ Accessory buildings, such as guesthouses.

- ✓ Other structures such as a barn, corral, shed, greenhouse, and so on
- ✓ Existing porch or deck
- ✓ Water elements like a pond, creek, or lake
- ✓ Huge boulders or stones
- ✓ Canyon, wilderness setting
- ✓ Constant winds, such as offshore winds from a nearby body of water or winds that continually blow caused by a nearby narrow canyon.
- ✓ Perimeter fencing which is generally permanent fencing mirroring your property line.
- ✓ Desirable views



You're assessing where best to put a chicken coop, secure outside pen, compost spot, and free-range options for your chickens. When sketching plans for your property, don't forget to include other components that are important to you as well, such as focal landscape, a child's playground, a vegetable garden, or an orchard.

Working with elements that can be modified

Some elements on your property aren't permanent and can be changed. You may find that you want to adjust their locations, or simply remove them, because they currently occupy space that provides sun, space, and quiet — perfect conditions for housing and free-ranging chickens. With some work or tweaking, the following elements can be moved or modified:

- ✓ Trees can be trimmed or cut down
- ✓ Secondary fences can be taken down or erected
- ✓ Landscaping such as small trees, hedges, large shrubs, and climbing vines, can be removed
- ✓ A trailer or camper can be moved to hide it, or removed
- ✓ Junk piles can be cleaned up
- ✓ Unused children's play equipment, such as a basketball court or trampoline, can be taken out
- ✓ Outdated patios and decks can be moved, recycled, or taken away

Noting the lay of the land on paper

After you identify all your permanent and temporary elements, the next step is to put these elements on paper and to scale.

You may find you have more space if you take down a tree that isn't your favorite. Maybe your design on paper indicates that you have a natural division where a chicken coop, secure outside pen, and runs could be located on your property in an area of its own.



Creating a paper layout of your property allows you to quickly see which areas lend themselves to raising chickens and creating a compatible garden space. Use this plan as a record of where elements can be changed and where elements can be built.

This task ties back to creating a landscape design around your needs (check out Chapter 5). The more detailed and specific you can be with your plan, the easier it is to implement it.

Knowing What to Expect from Free-Ranging Chickens

You have some important aspects to consider when choosing how to free-range your chickens. Take a look at the following handy list of how free-range chickens behave so you can pick a free-ranging option from the next section that works for you:

- ✓ Chickens can be messy in their search for food. They can displace walking bark paths and make indentations for dust baths at the base of your favorite shrubs. If you consider it a problem, you can take care of it with a good broom sweeping, rake, or shovel.
- ✓ Chickens are more prone to harm and death from predators in a free-range situation compared to chickens kept in a chicken coop and adjoining secure outside pen.
- ✓ Chickens leave fresh manure or poop intermittently throughout softscape and hardscape, which is a good and bad thing. Chickens freely fertilize spots where you want them to and spots such as pathways or high-traffic areas where you don't welcome manure.
- ✓ Chickens do well in a heavily planted landscape. They blend in well and have more forage food available, and you can see less of their scratching and aerating work. A smaller, heavily planted and layered, fenced

landscape is a better environment for free-ranging chickens than a large, open, and fenced landscape.

- ✓ A chicken flock free-ranges mainly in a unit, so your entire flock will be concentrated in a small area, even though allowing for our suggested 250 square feet per bird. They can move quickly and like to be on the go.
- ✓ Your free-ranging flock will gravitate toward its favorite spots in its garden, pasture, or yard.
- ✓ If one hen happens to get separated from the flock, perhaps by going back to the coop to lay an egg, she'll loudly cluck and make noise until she reunites with her flock.
- ✓ If you're in your garden or landscape, your chickens will be close by, working in their own way alongside you.
- ✓ If your chickens are free-ranging, they eat less of their laying feed and poop less inside their coop. This is a good thing.
- ✓ Any part of the garden you have redone, or recently mulched, or newly planted is a magnet to your flock of chickens. Temporarily fence them out if you don't want that area disheveled.
- ✓ Chickens get into mischief occasionally, like flying into a fenced-off vegetable garden or your neighbor's yard.

In addition to chicken behaviors, you can expect to have the freshest, tastiest, most nutritionally valued protein in your home-grown eggs. Chickens are so much fun, they can be addicting. Your friends and neighbors may jump on the bandwagon and experience the joy of raising chickens too. It's up to you, as a flock owner, to use common sense, good judgment, and good management practices involving your chickens.



The way to a chicken's heart is loving care and *food*! Food is always a motivator for a chicken. Chickens can't really distinguish between what you want them to forage and what you don't, so be sure to clearly manage this task for them. In Chapter 8, we discuss various chicken-resistant methods.

Finding a free-range option for you

No matter how your land lays out, you have many different options for free-ranging chickens. The best method for you depends on your lifestyle, your garden landscape, your property setting, and how you want to raise and manage your chickens. Free-range can be divided into two basic categories, free-range and confined-range.

Here are some details for each type of free-ranging method:

- ✓ **Free-range in the garden all the time:** In this option, a chicken coop and secure outside pen are located in a perfect spot in the garden. Gardeners create a perfect layering of landscape and plant materials or ecosystem. Chickens are allowed to free-range throughout the garden and landscape all day. This setting provides them supplemental food, shelter, and protection from predators. In return, chickens forage, eat pests and weeds, and aerate and fertilize the garden. Chickens naturally return to the coop for egg laying, feed, and at nighttime to sleep. At dusk, the chicken coop is closed and securely locked for the night. In cases of bad weather, or when owners are on vacation, the chickens are confined to their coop and secure outside pen.
- ✓ **Free-range in the garden part time:** This variation is the same as free-range all the time, except the owner lets chickens free-range part time or on weekends, and when the owners are around. When chickens are not free-ranging, they have movement and safety within the confines of their chicken coop and secure outside pen, which is protected on all sides.

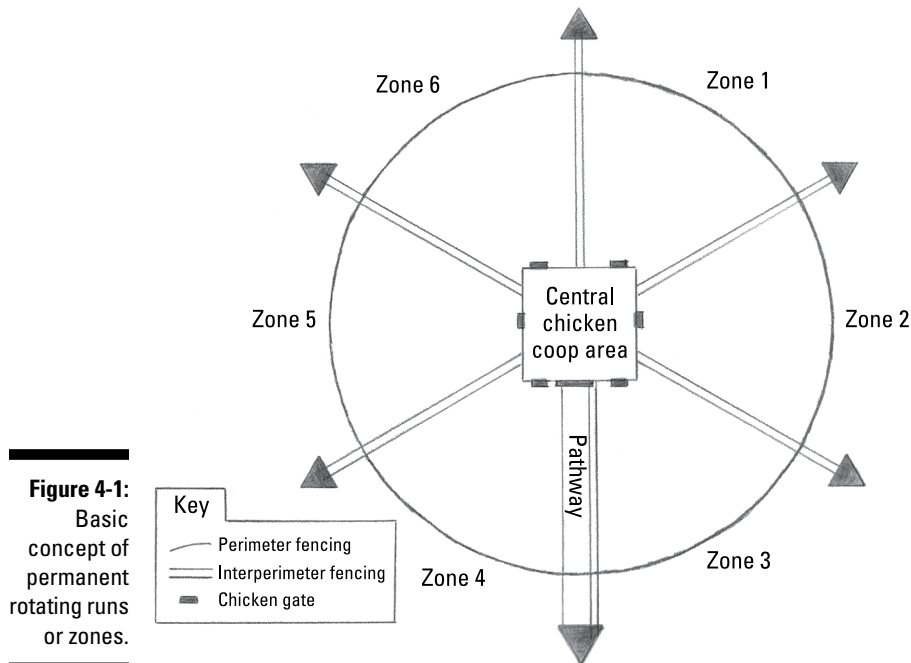
For most of us, a confined-range method works best for managing and caring for our chickens, and still maintaining a beautiful and bountiful landscape.

- ✓ **Confined free-range with rotating permanent runs or zones:** These are permanent runs that allow chickens to be rotated throughout the year. Chickens can forage and range in these runs seasonally, or when needed. Small chicken gates open from a central chicken coop area. Chickens have access throughout the day to their feed bucket, waterer, and nesting boxes from the runs. Each run has plants for shelter and protections from predators. Example runs are an enclosed orchard, a berry patch, or a section of your garden.
- ✓ **Confined free-range with temporary runs:** With this method, you have temporary fencing and chicken containment for a small period of time such as a day or afternoon. You can use temporary chicken runs to do a certain job, such as turning over a compost area or mowing a lawn. Chickens are confined to free-ranging in a temporary spot, for short term situations.
- ✓ **Confined free-range with mobile chicken coops:** A chicken flock pastures during the day and has a chicken coop that's mobile and accessible during the day. (We also discuss this scenario in Chapter 3.) The chickens can be closed in their mobile chicken coop at night. Protection against predators is necessary and extremely important as the flock is in an open environment with little shelter landscape. This method is usually accompanied with a trained dog to protect and temporary perimeter fencing, such as electrical fencing. Chickens can be easily moved and relocated to another section of a pasture. This method is practiced in rural areas that have larger flocks.

- ✓ **Confined free-range with mobile chicken tractors:** These mobile chicken tractors usually have no floor. Chickens are confined within the chicken tractor, with some type of secured wired fencing. They're usually on a smaller scale for ease of mobility. These tractors can be permanent, but most are temporary chicken housing. These tractors are great for versatility. Chickens have protection, food, and water, and can forage at the same time.

Confined-range in rotating runs concept

This basic, hypothetical, confined-range chicken concept consists of multiple separate foraging runs or zones for a chicken flock. This concept can be used in an urban, suburban, or a rural setting. Figure 4-1 shows six separate runs or zones. The number of zones can vary depending on your property, landscape design, and overall layout. All runs or zones are connected to a central chicken coop and secure outside pen, accessed by small chicken gates. Opening and closing these chicken gates allows management of which run to forage chickens in. Chickens have access throughout the day to their feed bucket, waterer, and nesting boxes from their runs. Ranging chickens return to their secure chicken coop to roost, and are locked up in their chicken coop for protection each night. All chicken gates are closed for the night.



After creating these permanent runs or zones, you simply rotate your flock to these different foraging areas. Having the ability to rotate these runs or zones gives you a lot of flexibility. You can rotate your flock when one run or zone is grazed to a level you desire. You might use one run or zone in a particular season only.

How long you keep your flock in each run or zone depends on many variables. You want to confine-range your chickens so that a run or zone is not over grazed. This depends on what is planted in each run or zone and the size of your chicken flock.

This multiple run or zone concept allows your chickens to be rotated regularly, which lets each foraging area replenish itself with plant growth.



These foraging areas can be defined by many names like outside runs, zones, garden rooms, enclosures, sectors, paddocks, pastures, or whatever you want to call them.

These rotating runs ideally provide food for your chickens to forage on, landscape to shelter them, shade from the sun and camouflage to hide them from the keen eyesight of predators. From these rotating runs, chickens must have access to their nesting boxes, feed, and water.

It's highly unlikely that your chicken flock can forage for all their caloric energy needs solely by ranging in these foraging runs or zones. Your flock, however, will eat far less feed when ranging, which saves on your feed bill. Chickens benefit by having access to both a balanced laying feed, and foraging for their natural diet.

In this ideal scenario, each run or zone can be planted with a mixture of plants for all seasons, or you can have a run landscaped specifically for each season. This rotating run concept can help you understand how to rotate and manage your chicken flock effectively in your garden.

Overforaging with your chickens leads to a barren run, and doesn't allow a run to naturally replenish itself with new growth. In other words, each run needs vacant time for green growth to replenish itself. Usually, it takes at least three-weeks time for a foraging area to replenish itself. Many variables affect how long a foraging area can be used before chickens are rotated to another run.

Check out Table 4-1 for some insight as to how many chickens will fit your space. Incorporate some technique for predator control, whether it's fencing, landscaping, a trusted guard dog, or another option. (See Chapter 10.)

Table 4-1 **Garden Size to Flock Size Ratios**

<i>Garden Size Examples (including home and garage)</i>	<i>Sample Flock Size Suggestions</i>
< ¼ acre (urban)	3 to 4 hens, choose smaller breeds
¼ to ½ acre (suburban — varies around country)	5 to 6 hens
½ to 1 acre	6 to 12 hens
> 1 acre (semi-rural to rural)	large flocks, check city/county zoning

More on rotating permanent runs

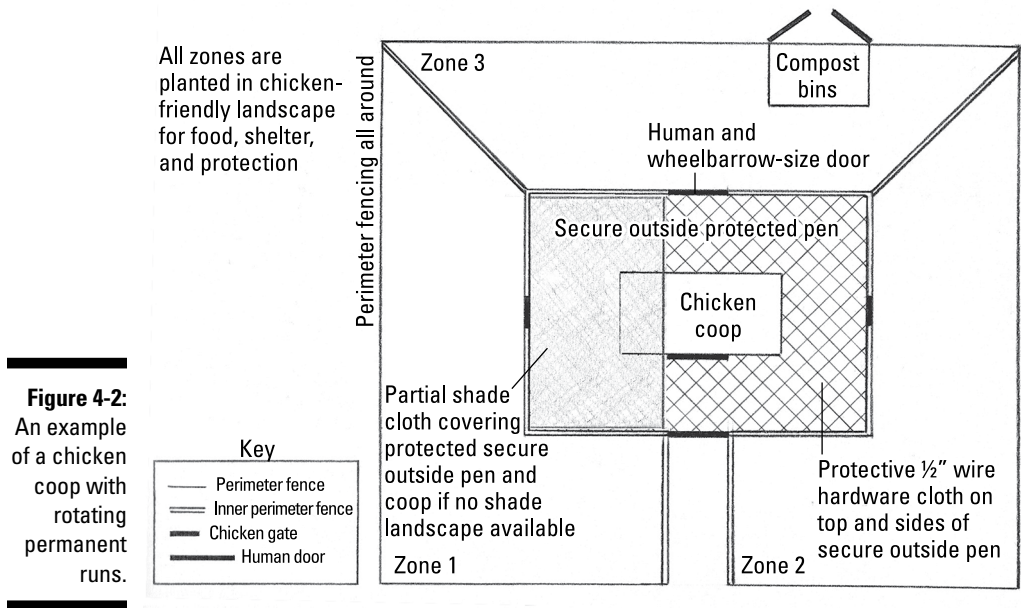
A permanent rotating run or zone has permanent fencing, and it essentially creates a zone for your chickens to forage in. Rotating runs are directly connected to the chicken coop with its own door. Figure 4-2 illustrates a chicken garden with three rotating runs and a separate centralized area for the chicken coop and a secure outside pen. You can design these permanent runs into your overall garden design, cloaked as an orchard, a pasture, a vegetable garden, and more.

Rotating runs ideally have chicken-friendly landscape that provide your chickens food at various times of the year, shelter, and protection from predators. In Chapter 6, we discuss in detail a layered plant landscape beneficial for chickens in their chicken run, and in Chapter 7, we suggest plants that have purpose and are beneficial to chickens.

Variables such as flock size, chicken breed, climate, and the “lay of your land” help determine the size. We suggest using a formula of a minimum of 250 square feet per bird. If your property accommodates more space, allow for more space per bird.

Rotating your chickens among multiple runs is key to the success of this method. If a chicken run is overgrazed, patchy, or barren, try rotating your chickens a week earlier than you have been.

Rotating permanent runs or zones in a landscape require thought and planning. The idea of these runs is to rotate them at intervals, allowing each run vacant time for new growth and replenishment. These runs can be planted for seasonal grazing, using different runs at different times of the year, or planting each run with a mixture of plants for all seasons. Simple suggestions for this illustration are trees, shrubs, perennial grasses, cover crops, herbs, and mixed greens.



Rotating permanent runs work well for a variety of reasons. Here are some examples:

- ✓ Your garden or landscape setting lends itself well to having runs separated from social entertaining and family areas such as patios and decks.
- ✓ You have a prize-winning garden that your chickens decimate every time they're in it. You need a separate space for your chickens.
- ✓ You're an avid gardener and love the idea of growing food specific for your chickens.

Figure 4-3 illustrates how rotating permanent runs translate into an efficient chicken garden design with a designated chicken coop corner and four runs or zones. Notice how this illustration highlights a vegetable garden that is kept separate from your chickens.

If you have a vegetable garden, we suggest you keep it fenced and off-limits to your chickens to avoid any potential salmonella disease exposure on your low-growing edibles. It is highly unlikely that you would be exposed to salmonella from your chicken flock, however, avoid free-ranging your chickens with low-growing edibles for your own consumption. In Chapter 10, we discuss more about common poultry diseases, some which are transmitted from fresh chicken manure.

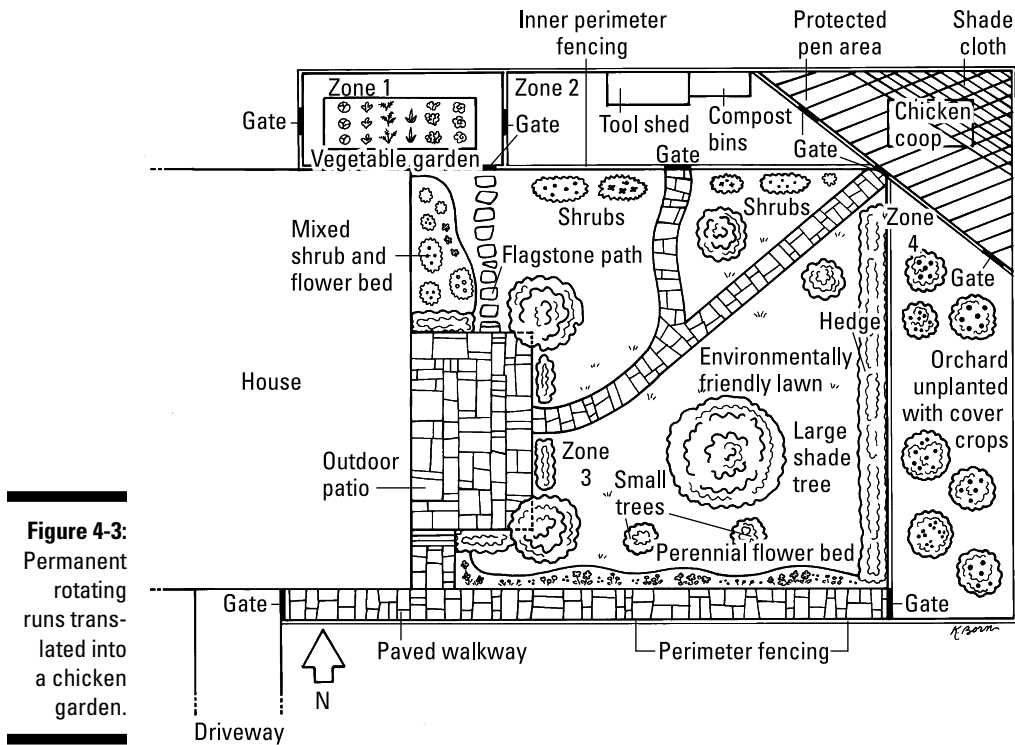


Figure 4-3:
Permanent
rotating
runs trans-
lated into
a chicken
garden.



Once again, because this is extremely important and bears repeating, we know of no easy and safe way to give your chicken flock full access to your vegetable garden. If you don't keep your vegetable garden separate from your chickens, 1) your flock will decimate and eat your entire vegetable garden, and 2) you want to avoid eating low-growing edibles that have been exposed to fresh chicken manure.

There is a time and place for chickens in your vegetable garden, which is generally at the end of the growing season or the end of the growing plot. You can let chickens graze through your spent vegetable garden, eating the last of remaining plants, eating any insects, tilling the soil, and fertilizing it with their manure.

We suggest that if you have created a potager kitchen garden, growing year-round vegetables, you will want to use the mobile chicken tractor method, focusing your chickens on the spent growing plot only.

In both instances, a spent vegetable garden or a spent portion of a potager should be left dormant over the winter once your chickens have ranged over it to allow their manure to age and break down. Come spring time, these plots will be ready for more finished compost, humus, tilling, and planting.



You can, however, plant ornamental edibles such as chard, kale, sorrel, and artichokes intermittently throughout your garden or runs specifically grown for food for your chickens and ascetics for your garden. Ornamental vegetables interspersed in garden landscape is very popular now. These type of edibles would not be for your consumption but for your chickens’.

Temporary runs

Temporary runs are best when you want to focus your chicken flock to a particular area but don’t want it to be a permanent situation. An area can be created with a flexible light wire such as chicken wire, rabbit wire, shade cloth, and even construction barrier cloth.



Temporary runs can be made out of cheaper fencing materials, such as chicken wire. Chicken wire is good material for wrapping around the base of plants for protection against chickens and using as a temporary containment for chickens, but it isn’t predator-proof as permanent fencing.

The beauty of temporary fencing is it can be easily changed and moved to another part of the garden when you want to create other targeted spots for temporary chicken runs.

Here are a few examples for using temporary runs:

- ✓ Fencing off your compost pile area and giving your chickens a “heyday,” mixing it up and aerating. Figure 4-4 illustrates temporarily fencing off a surrounding compost area.
- ✓ Replacing your weed eater with your free-range chickens for weed abatement for hard-to-mow areas around trees and rocks and on inclines.
- ✓ Letting your chickens graze to remove a lawn area.
- ✓ Working on your chicken coop, and/or permanent chicken garden runs, and using a makeshift temporary run.
- ✓ Grazing your flock in a focused area which has limited accessibility, such as an area of dense trees.
- ✓ Testing the concept. If you’re not sure you want to create permanent chicken garden runs, test the concept before investing time and money in a permanent design.

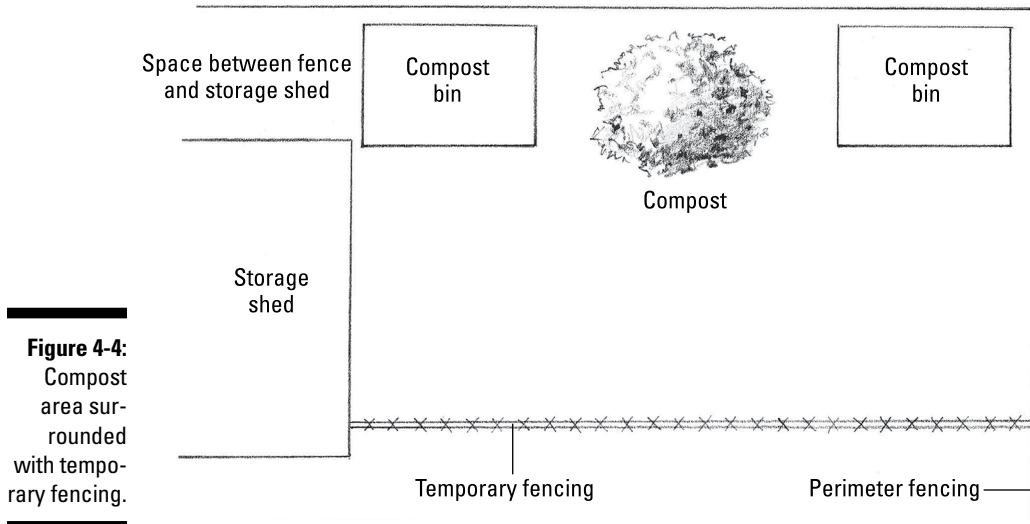


Figure 4-4:
Compost
area sur-
rounded
with tempo-
rary fencing.

Mobile chicken coops

Mobile chicken coops are chicken coops on wheels for mobility to move easily and frequently. Chickens have access to the chicken coop for their feed, water, and nesting boxes throughout the day. At night, they are securely closed in their coop. The mobile chicken coop is elevated off the ground by its wheels. This elevation off the ground can provide chickens shade and limited predator protection.

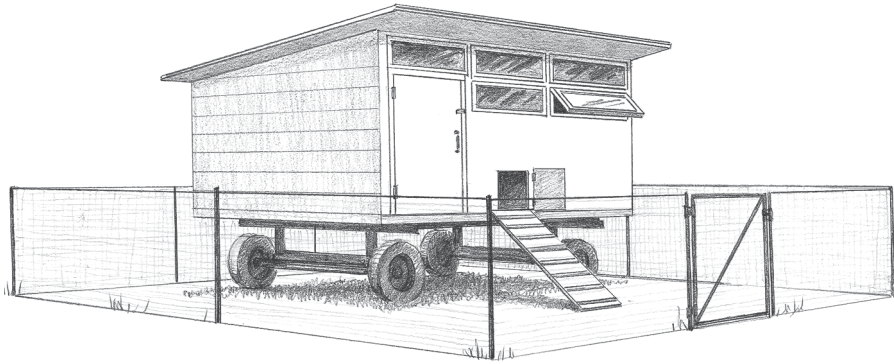
Mobile chicken tractors

Mobile chicken tractors, also called arks, are a viable option for confined ranging your chickens. You can find these tractors for sale online in various sizes, or you can build them fairly easily. If you are custom building your own, consider making them the same size as your garden beds or raised vegetable beds to help with the spent vegetable gardens we mentioned earlier in the chapter. Mobile chicken tractors can also be sized and effectively used for your spent flower gardens, too.



A mobile chicken coop and a mobile chicken tractor are two different things. A mobile chicken tractor is more enclosed and the chickens are contained. A mobile chicken coop is able to be moved but relies on additional temporary perimeter fencing. Mobile chicken coops are used more in pasturing; mobile chicken tractors are used in frontyard or backyard situations. See Figure 4-5 for an illustration of a mobile chicken coop.

Figure 4-5:
Mobile
chicken
coop with
temporary
fencing.



Mobile chicken tractors can be made out of many different materials and come in different shapes. They can be a permanent home or essentially a chicken coop for your chickens, or a temporary one to target specific areas. Whatever material you use, shape you make it, whether it has wheels or not, it should be fairly lightweight and easy to move. Mobile chicken tractors can be created to match your garden style, and complement your garden as a whimsical element.

The more common types are

- ✓ **A-frames, such as in a mini-chicken coop.** Two sides meet at a point creating an “A” shape. An “A” frame can be made out of wood and covered with a strong predator-proof wire mesh hardware cloth.
- ✓ **PVC pipe curved domed frames:** You can purchase curved PVC hoops and attach them to a sturdy wood-frame base. Cover your hoops and adjoining wood frame with a strong predator-proof wire mesh hardware cloth over the framework.
- ✓ **Little engine that could:** This mobile chicken tractor is strikingly similar to a train engine with wheels, and one side is a larger rectangular outdoor pen area. Quiet nesting boxes are located away from the grazing area and accessed by chickens with a ramp. A waterer and feeder can hang by a chain from the ceiling of the mobile chicken tractor. See Figure 4-6 for an illustration of this.

Chicken tractors can be bottomless or have welded wire bottoms (2 x 3 inches or 2 x 4 inches) to allow your chickens to forage in that spot directly covered by the mobile chicken tractor. Take care to rotate these tractors regularly to avoid overforaging.



A mobile chicken tractor can be turned into a permanent coop or used for temporary situations. If used as a permanent coop, provide all of the basics needed in a chicken coop, such as a safe place to lay eggs, a night roost, and access to fresh water and laying feed.

Use mobile chicken tractors for temporary situations for short periods of time such as an afternoon or one day. Always provide your chickens fresh water and food (if there is none to graze), a spot to quietly lay, and any needed shade or heat protection. In this situation, check on your chickens regularly. The mobile chicken tractor concept originated out of England, and therefore is not designed and the best for ranging chickens in hot climates.

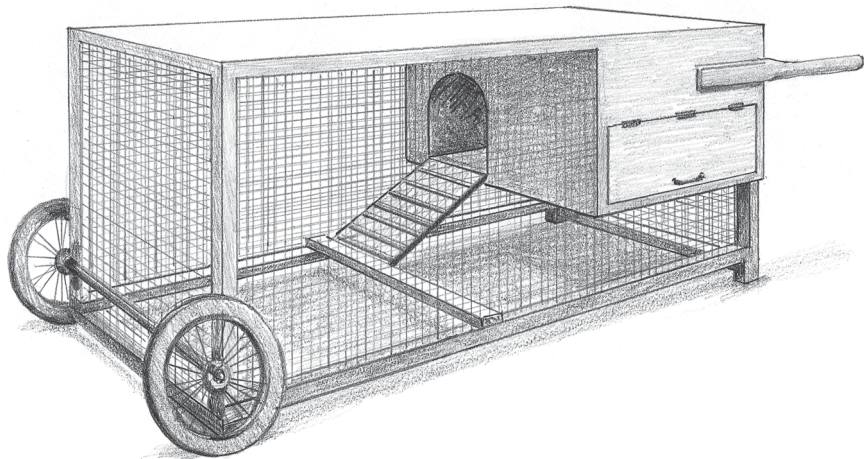


Figure 4-6:
A mobile
chicken
tractor.



Mobile chicken tractors are generally better for housing smaller flocks because of their size dimensions. Mobile chicken tractors are also great as an alternative chicken coop and pen in a pinch.

Mobile chicken tractors can really be useful. Following are some of their popular uses:

- ✓ When you need to separate a few chickens from their flock for any reason. See below.
- ✓ When you want your chickens to have access to a grassy area without having enough time to completely decimate it.
- ✓ When you want to keep a rooster and hen together for specific breeding purposes.

- ✔ When you need to keep a hen isolated and quiet after an unexpected injury.
- ✔ When you're administering medications to specific chickens.
- ✔ When you're worming some hens, but you don't need to worm the others.
- ✔ When you're introducing new members gradually to a flock.
- ✔ When you're raising a new flock of chicks.

Tapping unused urban space

Don't forget about the spaces behind your garage and the alley fence and narrow often-unused side yards. These spots are great but tiny, most common in residential and urban properties that are often cluttered or are too small to really be functional. These small spaces can be great free-ranging or confined-ranging spaces.

These spaces can give you an extra outdoor garden space to rotate your flock. They can also serve as a possible chicken coop location, depending on many variables, such as size and proximity to your neighbors and your own living space. These spots are somewhat protected and need little modification for chickens. They may even be instant usable space, especially for urban lifestyles.

These same often-neglected spaces can be a highlight in your garden and are perfect for

vertical garden plantings. You may even want to turn these spaces into beautiful, usable, small garden rooms.

For vertical garden plantings, layer a narrow space in creative top, middle, and bottom plant layers rather than the traditional plant layering of back to front. Planting these narrow spaces beautifies these areas and can help muffle noise to or from a neighbor. Chickens won't be able to reach your planted top-layer plantings, but they may have access to your middle and bottom layers. Plant your middle and lower layers with chicken-friendly plants (see Chapters 6 and 7).

Chickens can easily overforage these small spaces. Avoid over-foraging of these smaller areas by rotating your chicken flock sooner to other area or runs.

Creating a Chicken Utopia

What if you could create a working, harmonious, and easy plan to balance raising chickens, composting, and gardening, while allowing your chickens to be free-ranging? It has been done, and the result is a self-contained chicken hamlet — or a chicken utopia.

What would this chicken utopia look like? A chicken coop is centered in the middle, flanked on each side (east and west) with large, fenced, permanent chicken garden runs that also alternate as garden growing areas. It includes a space behind the chicken coop for a contained compost area. Every feature is handy and close at hand. Chicken runs are alternated easily by the switch of an outside door. Chickens fertilize garden areas and, with the addition of humus and tilling, get a chicken run ready for planting.

Each year the large fenced runs are alternated between chickens and a planted garden. One year, you plant a vegetable garden in one of the fenced areas, while the other is a perfect permanent outdoor chicken run. The following year, you add finished compost or humus to the permanent chicken run, mix and till it into the soil, and plant it.

This concept is easy, efficient, and self-contained. It covers all elements of chickens confined-ranging in a garden. Figure 4-7 illustrates this perfect chicken hamlet.

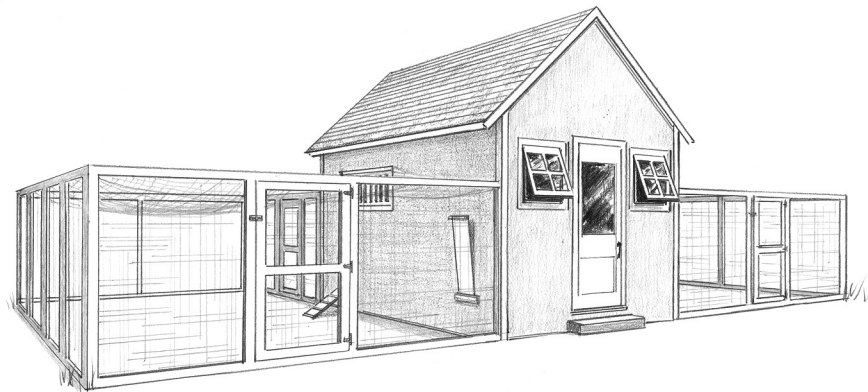
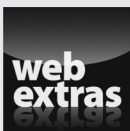
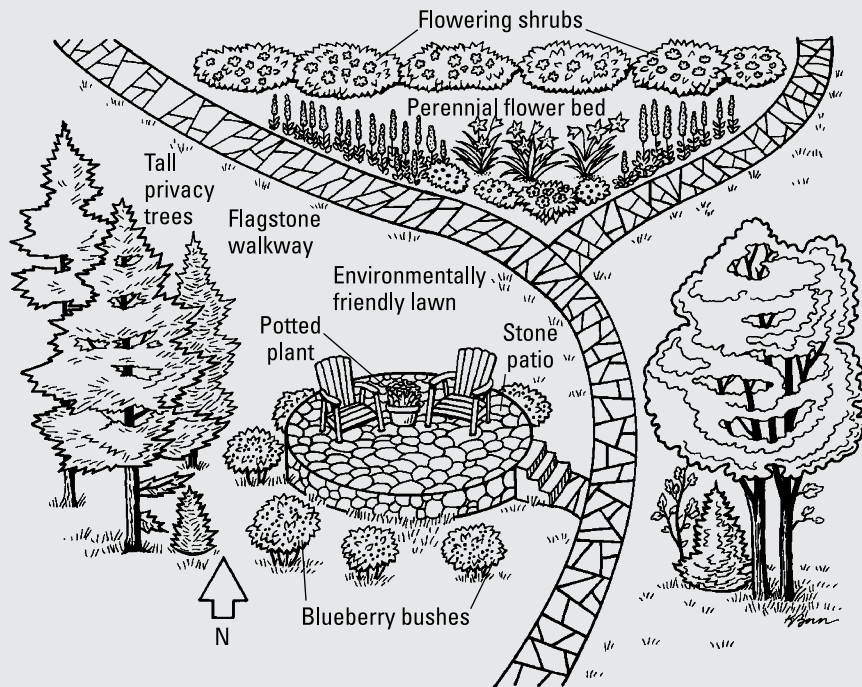


Figure 4-7:
A chicken
hamlet as
utopia.

Part II

Designing a Chicken-Friendly Garden



Learn how to prepare for seasonal changes in your garden and discover how they affect your chickens in a free bonus article at www.dummies.com/extras/gardeningwithfreerangechickens.

In this part . . .

- ✓ We walk you through the many hardscape and softscape options available and show you what's best to use for your life-style and for your chickens.
- ✓ Plants offer so many benefits! We offer some plant suggestions for food, shelter, and medicinal purposes.
- ✓ Free-range chickens need a place to roam and forage, so we offer an abundance of information on creating an edible garden space for you and your chickens to enjoy!
- ✓ Some areas need to be off-limits to chickens; we guide you on ways to restrict access and give you important tips on steering your chickens clear of harmful plants.

Chapter 5

Creating a Safe and Smart Garden Space: Landscape Material Ideas

In This Chapter

- ▶ Selecting hardscape and softscape materials for a chicken-friendly garden
- ▶ Using automated and manual water systems in a chicken garden
- ▶ Considering fencing materials to benefit your chicken garden and ward off predators

Landscape materials are an integral part of a chicken-friendly garden. These important materials are the fabric and foundation for creating a sustainability environment for you and your chickens, and ultimately a balanced garden landscape. When you and your chickens are happy, it's a win-win situation.

Landscape materials are available in many different forms, colors, costs, and styles. In this chapter, we give you an overview of common hardscape and softscape materials, irrigation methods, and fencing options for your chicken-friendly garden.

Setting the Landscape Stage

A landscape has two basic elements: the hardscape and the softscape. *Hardscape* describes all the non-living or man-made materials in a landscape, such as concrete, stone, and gravel. *Softscape* describes all the living materials in a landscape, such as plant materials, flowerbeds, mulch, and soil amendments. Check out Figure 5-1, which illustrates combining hardscape and softscape elements together.



Soil amendments are materials or products added to a soil to improve its condition and quality, particularly for its ability to provide nutrients for plants to grow and thrive.

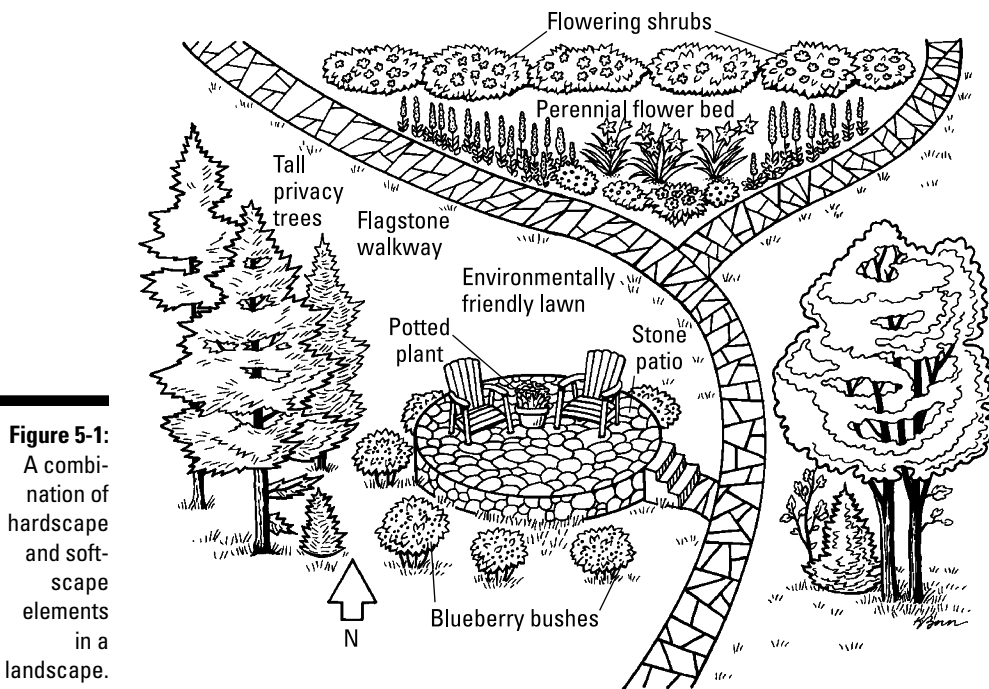


Figure 5-1:
A combination of hardscape and softscape elements in a landscape.

Whether you have an existing garden, or you're starting with a clean slate to create a new garden or an outdoor area, you need to consider both of these landscape elements carefully. Adding free-range chickens to this equation is easy.



Before adding chickens to an existing landscape, take the time to look for any existing potential hazards and remove them. Potential hazards include anything like open pits, leaky irrigation, cluttered junk, abandoned buildings, sharp objects, poisonous plants, and old pesticide containers.

Potentially poisonous plants harmful to chickens is an important topic we cover in depth in Chapter 8.

Landscape elements fold into a landscape design and can be a lot of fun. Whether you tackle your landscape yourself or hire a professional, have a solid plan first. The choices for landscape elements come directly from your personal style, preferred colors, planned lifestyle activities for your garden, budget, and your "spirit of place."



Create a landscape design around your needs:

- ✓ **Budget:** Budget is everything. It sets the parameters for your total project and helps you make decisions based on cost.
- ✓ **Style:** Style is the creative look, feel, and ambience you're seeking. Your style guides you through your hardscape and softscape selections.
- ✓ **Functionality:** Identify the activities that give you purpose-driven reasons to be in the garden. Important space allocations and specific requirements of these activities help further refine your landscape design.
- ✓ **Living elements:** Chickens and family pets are an important living element to your garden design, and you must consider their needs in your landscape design.



Consider using a favorite color as an accent and a running theme throughout your garden by using hardscape and softscape elements. For instance, you can repeat an earthy sunset rust color in a curvy concrete path, a plant palette, and a garden bench.

Laying the Foundation: Handling Hardscape

Hardscape refers to the non-living materials or elements in a landscape. Hardscape elements take heavy traffic and are usually associated with pathways and entertainment areas, such as patios and decks. These elements also tend to create the flow of the landscape and define particular social spaces.

Hardscape elements are usually low maintenance, don't require a lot of upkeep, and seem to get better with age in your landscape. After you install hardscape in your landscape, you may need to replenish some materials from time to time. The beauty of hardscape is that it's enduring and it can take the weather. The following sections walk you through the different types of hardscape elements and prepare you for choosing materials based on your gardening and chicken needs.

Common hardscape elements

Typically, hardscape comes in many common materials, such as concrete, concrete pavers, stone, decomposed granite, bricks, and wood decking.

Choosing exactly what type of hardscape to use depends on your landscape setting, your budget, and how handy you are. When in doubt, call a professional. Creating a curvy concrete pathway requires expertise; on the other hand, a do-it-yourselfer can create a woodland pathway with a heaped wheelbarrow of walking bark.

Many of these hardscape materials have permeable qualities that advantageously allow rain and water drainage to seep into the ground rather than run off. These permeable materials also allow water to reach tree roots and dissipate excess rain or water runoff before causing problems.

Concrete

Concrete has experienced a rebirth in recent years as a design medium, inside the home, as well as outside in the landscape. Colored concrete makes for chic durable kitchen and entertaining counters. It pairs well with industrial style architecture and furniture.

Concrete is equally trendy and popular in the garden as a hardscape element. Anything goes; it doesn't have to be basic concrete. You can not only customize the shape, color, and texture you desire, but also personalize it by molding objects and memorabilia in it. Customizing a concrete wall or path is as simple as adding great flea market finds, such as old tools and vintage water faucet handles, into your wet concrete before it dries.

Although concrete is one of the most popular landscape elements used today, concrete doesn't have the best permeable qualities, and in natural light colors can show rust and other marks from outdoor furniture or pots. Chickens walk on concrete, but they don't stay long, because they prefer scratching in the dirt and foraging for food. Concrete can be hot to walk on in the summer; this heat further discourages chickens.

Concrete pros and cons: Concrete is economical, and it's a great medium to design with. Concrete can crack and break up in extreme weather conditions. Concrete holds heat.

Concrete pavers

A more flexible variation of concrete is pavers. Concrete pavers are simply smaller pieces of pre-cast concrete that are usually interlocked and placed on a level compact sub-base. Pavers come in many colors, and you can use them to create many designs. Because of the design factor, pavers create a more formal look. Pavers aren't held together with grout, but with a fine layer of sand. This layer of sand allows for more flexibility with rain runoff and potential earthquake movement. And you have the added benefit of expanding and contracting properties with fluctuating temperatures.

Some of the more common uses for pavers are driveways, pathways, and heavy foot traffic areas like building entrances, around pools and fountains, and patios. Typically, you don't want your chickens roaming in these areas, and chickens react to concrete pavers the same way they react to concrete.

Concrete pavers pros and cons: Concrete pavers are a more formal style than traditional concrete. They have an attractive design or pattern and have more environmental flexibility thanks to their interlocking pieces. Concrete pavers can be used in small areas, and they take high traffic easily. Concrete pavers can be costly in labor, materials, and design.

Stone

Stone is a large, vastly diversified category. Generally speaking, the cost of stone is determined by its origin, weight, and freight cost. Stone types can vary regionally, but are readily shipped all over the country.

Stone comes in many sizes, colors, textures, and prices. Table 5-1 highlights some common stones and their usage.

Table 5-1 Common Stones for Landscapes		
Type	Description	Usage
Pea gravel	Very small, 3/8", rounded	Courtyards, pathways, driveways
Stone	Small, 1/2"+, rounded	Traffic areas, courtyards, pathways, driveways
Flagstone	Flat, irregular-shaped, 8"-12"	Pathways, patios
Beach pebble	Smooth, rounded, 4"-5", somewhat flat	Borders, covering flowerbeds
River rock	Medium-sized, 6"-10"	Borders, multipurpose
Boulders	Large, measured in feet	Landscape interest, focal plantings

Stone is a popular design material that can single-handedly take the place of a thirsty lawn. Using stone material in your landscape can evoke many diverse styles, such as ultra-modern or rustic country. Stone has permeable qualities and is easy to care for. A light raking or a quick blowing with a landscape blower will clear leaves, pine needles, or whatever accumulates from your landscape.

Chickens can walk on stone easily. Although stone is a permeable material, chicken manure takes a long time to break down, and it is best to scoop or pick up after your chickens, especially if stone is a pathway or high traffic area.

Stone pros and cons: You can find a stone for virtually every type of landscape and style. Stone is timeless in a landscape. Stone isn't a smooth surface, and can shift under weight. Stone can be very costly.

Decomposed granite

Decomposed granite, or DG, is also stone. DG has become a very popular permeable, low maintenance material to use for high traffic areas. Decomposed granite is made up of $\frac{3}{8}$ " pebbles and fine granite dust. DG is usually associated with a compacted under base. Also available in many colors, it's a nice material to use in a path or driveway. Like pea gravel, DG can be raked or blown with a lawn blower. Small amounts of chicken manure left on DG will eventually break down and disappear over time, if you don't scoop them up first.

Decomposed granite pros and cons: DG is a nice surface for pathways and driveways. DG is made up of fine grit that's very agreeable to chickens. DG can be costly to install, because it needs a compacted under base, and typically borders or edges. DG has to be replenished from time to time.

Brick

Brick is a nice material for a pathway or patio. Sometimes you can find vintage bricks from old buildings to create a worn but welcoming look. Brick can be washed down easily with a hose or sprayer, if your chickens happen to meander on your brick path or patio. Bricks, like DG (see the previous section), require care to get a good level base. If not properly installed, bricks have a tendency to sink and become uneven. Bricks are usually held together with concrete.

Brick pros and cons: Bricks are a hardscape material reminiscent of earlier decades. In some parts of the country, brick materials are much more prevalent. Bricks are versatile and can be used for walls, walkways, patios, edging, and buildings. If you're using brick, make sure you have enough to cover your project, because finding the same brick may be hard to match. Bricks can crack and spilt in extreme weather conditions. If you're using brick as one of your hardscape materials in your landscape design, hire a professional bricklayer to get it right the first time.

Got grit?

Have you ever heard the saying, "As rare as hens' teeth"? Chickens don't have teeth. Because they don't, chickens must have grit, either in their diet or from their environment. *Stone grit* is an insoluble material that helps

them grind up their food for digestion in their gizzard. Free-range chickens have the added benefit of getting grit from the soil in the garden as well as from possible DG hardscape areas.

Decking

Decking is a wonderful addition to a garden landscape. Decking is usually made up of a hardwood material that can stand up to the elements either left to weather, or protected with an oil, sealant or even paint. Most wood decking is absorbent to chicken manure, and not always that easy to clean.

Synthetic decking made from plastic or a composite of man-made materials is an alternative material. It is durable, and less absorbent than a natural wood material. Check with your deck builder or building material manufacturer for suggested care and maintenance.

Generally speaking, decking isn't a place for your chickens. Keep chickens away from your patios and eating areas and do not feed chickens treats around your food preparation and eating areas. Chickens can pick up bad begging habits, just like a dog that begs by the dinner table. Feed your chickens treats around their coop, or in the garden. A raised deck with steps, thick landscape, or even low fencing may discourage chickens and keep them off of your deck.

Decking pros and cons: Decks are a great hardscape element to define a large social and relaxing space. Decks can be costly when you add up initial materials, design, labor, and maintenance.

Keeping your hardscape separate from chickens

Hardscape areas may or may not be the areas you want your chickens congregating. If you want to keep your chickens away from your hardscape elements, here are some solutions you can follow:

- ✓ **Effective management of your chicken flock within your garden.** It is wise to manage your chickens where they can and cannot go in your landscape and throughout your property.
- ✓ **Some landscape elements, such as boxwood hedges, dense shrubs, and ground cover act as living fences and barriers.** Chapter 8 offers more details about using chicken-resistant plants in your landscape.
- ✓ **Distinguish your patios and social areas by using elevation and steps.** Chickens prefer ramps and incline ladders to steps. Adding a few steps to a raised patio area is sometimes enough of a deterrent to keep your chickens at ground level and off your patio.

- ✔ **Work on creating chicken-friendly areas in your garden and away from your hardscape social and entertaining areas.** Don't encourage your chickens by feeding them or giving them treats in your off-limits hardscape areas. Keep your chickens' feed bucket and waterer in the coop, where they have access to it all day. Create a spot where the soil is sandy and they can enjoy their dirt baths. Patiently herd them away from your hardscape areas when they venture near (see Chapter 9).

Layering the Landscape: Adding Softscape

Softscape materials can be plant materials, flowerbeds, soil amendments, compost, mulch, or, simply, the organic living elements of a landscape. Free-range chickens in a garden landscape spend most of their time among these preferred softscape elements.

The softscape elements provide protection, shelter, food, and enjoyment for your chickens. In return, your chickens provide your softscape elements with soil aeration from their scratching, random fertilizer from their manure, weed control, pest control, and a certain ambience.

Ensuring a good base: Soil

A healthy garden and landscape start first with a healthy foundation of living soil that's full of nutrients and beneficial organisms. If you pay attention to a healthy soil base, your plant materials and landscape will thrive. Plant materials are so important in the landscape; the next two chapters, Chapter 6 & 7, focus entirely on plant material and their many purposes.

Common softscape elements that improve a soil's base are soil amendments, compost, mulches, and walking bark. *Soil amendments* are something you add to and thoroughly mix with your soil when your soil lacks something like minerals or nitrogen. Because these elements break down into your soil, and are also absorbed by growing plant material, you add these elements periodically.



Always check the safety of using any soil amendments with live animals. It is a good practice to water in any soil amendment so that it can disperse thoroughly in the ground. You can even temporarily fence off the area to give those supplements time to dissipate.

Composting ultimately creates *humus*, which is the best organic soil amendment you can add to your soil, especially if you make it in your own backyard. Over time, adding humus to your soil creates *loam*, which is essentially the perfect soil.

Mulches can come from your yard, too, in the form of leaves or grass clippings. Place mulch on top of the soil and around the plants instead of mixing it into the soil. Mulching helps your plants retain moisture, inhibits weeds, and can also add a beautiful finished top-layer look in your garden.

Walking bark is larger, denser pieces of chipped trees and miscellaneous landscape. Walking bark can be used for high traffic areas, entertainment areas, and ascetic mulching.



Know the soil type of your property. Soils can differ from one region of the country to another. The type of soil composition and the type of plant materials on your property and landscape determine which softscape materials you need to enhance your soil. Soils usually fall into a combination of three types: sand, silt, and clay. Here's the lowdown on each of these types:

- ✓ **Sandy soils:** These soils are made up of relatively large boulder-shaped particles. These soils are characterized as light soils because of their light density and abundance of air spaces. Sandy soils drain easily, and they amend easily with organic matter that slows their rapid drainage. A moist sample of sandy soil feels rough and gritty, like sandpaper.
- ✓ **Silt soils:** These soils are made up of medium-sized boulder-shaped or flat particles that fall between sandy and clay soils in density and structure. Silt is an important component of loam. Silt soils have drainage that's somewhere between fast draining sandy soils and slow draining clay soils. A moist sample of silt feels neither sandy nor smooth, but light and airy with some density to it.
- ✓ **Clay soils:** These soils are made up of very tiny particles that are flat with very little air space. They're considered dense soils that drain slowly. Clay soils can be rich in nutrients, but they benefit from adding amended organic matter to help them take up air, water, and nutrients more readily. A moist sample of clay soil feels smooth and slick..

Equally important is knowing your soil pH, which is a measurement of alkaline or acidity of your soil. A pH scale ranges from 1 to 10. In this scale, 7.0 is the neutral reading, which is also the pH reading of chemically pure water. The lower the pH is away from 7.0, the more acidic the reading. Conversely, the higher the pH is away from 7.0, the greater the alkalinity reading.

Most plants do best in a slightly acidic pH range between 6 and 6.5, where nutrients for plant nutrition are optimal. Some plants prefer acidic soils; examples include azaleas, blueberry plants, camelias, and some varieties of

hydrangeas. Composting has the ability to neutralize acidic soils and acidify alkaline soils.



You may need a detailed analysis of your soil, such as when you're making a huge investment in planting a vineyard or an orchard. You may also consider this detailed analysis if you're embarking on a landscape design, and you want to know how healthy your soil is, and whether it needs any soil amendments or corrective measures. For a fee, you can send a soil sample to your local cooperative extension and receive a detailed pH and nutrient soil analysis. Check out www.csrees.usda.gov/extension. Some online garden supply sources offer DIY kits as well.

Common softscape elements

Common softscape elements are soil amendments, compost, and mulches. The type of soil composition and the type of plant materials on your property and landscape will determine what softscape materials are needed to enhance your soil.



For best results, add softscape materials to the landscape in a layering effect. Mix soil amendments and compost with existing soil. Amended soil is readied for adding plant material to flowerbeds. Healthy plants further benefit from a layer of added mulch around their base to keep moisture in and weeds away. If you include larger shrubs and trees in the landscape, they create structure and shade canopies, provide windbreak qualities, and provide visibility protection for chickens.

Soil amendments

Soil amendments improve the physical structure and properties of soils. You mix amendments, with a shovel or a rototiller, into the soil thoroughly to provide a better environment for plant roots to receive soil nutrients and oxygen, and for better drainage.

A lot of different types of soil amendments are available. The best amendments are the ones you make yourself. (We introduce you to the concept of sustainability in your own yard in Chapter 1.) The next best choice is to buy organic amendments versus inorganic amendments when you have a choice. You can find a lot of good commercial organic soil amendments on the market today. Try those that are recommended by your favorite nursery or home improvement store, and make sure you know what's in them.



Inorganic soil amendments are usually man-made amendments, such as chemical nitrogen fertilizers. Chemical nitrogen fertilizers are water-soluble and are a real problem because the runoff during heavy rains and watering can cause serious water pollution. An example is excess chemical fertilizer runoff mixing

with a small pond and creating rampant choking green algae. By their very nature, inorganic soil amendments often are made up of man-made chemical materials that are non-sustainable and non-renewable, and involve open mining energy to obtain. Inorganic soil amendments are harder on the environment, your plants, and the host of beneficial organisms living in healthy soil.

Organic soil amendments come from living sources — or they once were living sources. Examples include compost, manures (chicken, rabbit, sheep, horse, steer, cow, pig), gypsum, seaweed extract, alfalfa meal, organic cottonseed meal, bone meal, blood meal, worm castings, and fishmeal.

Organic soil amendments are the better choice, if you intend to free-range your chickens.

Soil amendment pros and cons: Organic amendments renew the soil and continue to make soil balanced and better. Composting is the best source of organic matter, something you can make yourself, and it's free. Some organic soil amendments can be quite smelly and can tempt family pets to roll and dig for enjoyment. Sometimes commercial-made amendments have questionable ingredients and quality.

Compost

Composting is fun and easy. In Chapter 1, we detail how to compost, and the many advantages of composting. By composting, you're practicing proper manure management, controlling flies, creating a dark nutrient-rich humus material, and returning it back into your soil.

Compost is a recipe. Take equal parts of brown ingredients and green ingredients — from your kitchen, chicken coop, and garden — and add enough water to be moist but not wet, and then mix and turn on a regular basis to aerate. Composting with chicken manure and chicken coop bedding gives you a natural combination of green and brown ingredients. Microorganisms are key to this transformation, working their magic over time

Chickens love the compost pile. They can help turn it for you and benefit the aeration process. Simply give them ground access to the compost pile by removing the stacks, pallets, or wiring, and so forth that your compost is contained in. Perhaps you have one large informal mound of compost, create two piles and allow your chickens access to these piles to mix, turnover, and aerate the pile.

When you add chicken manure to a compost pile on a daily basis, it's considered a green ingredient. Fresh chicken manure is considered hot manure, and it needs at least two months to compost and cure before you mix large amounts into your soil, plants, and flowerbeds.

Compost pros and cons: You have everything to gain by composting — from dramatically increasing the health of your soil and saving you money to practicing sustainability and effectively managing your chicken manure. If there are any cons, they include having the discipline to compost regularly, and having the brute strength to turn over your compost pile periodically, wheelbarrow it around your garden, and finally mixing it into the soil.



Composting is an easy and efficient way to remove, and make good use of, waste. However, there are some important points to consider and some techniques to be mindful of. For great tips and information on all the ins and outs of composting, check out *Composting For Dummies* by Cathy Cromell and the Editors of the National Gardening Association (Wiley).

Mulch

Mulch is another valuable softscape element that adds tremendous value to your garden landscape. You place mulch on the soil surface instead of mixing it into the soil. Different types of mulch can vary in different regions, depending on what's readily available. Mulching around plant material helps control weeds, reduces water requirements, adds nutrients, and protects plants from extreme hot and cool conditions.

Mulch is available in many material forms. Examples of mulch are compost, straw, topsoil dressing, pine needles, fallen leaves, and chipped trees used in walking bark. Consider what you have in your landscape naturally — it may make a good mulch material.



Before using a mulch material in your garden, make sure it is not toxic to your chickens and pets. For instance, cocoa bean mulch may look and smell great, but it is toxic to some animals. Mulched cedar is toxic to chickens, as mulch and as a bedding material in a chicken coop with the oils it omits. Never use a mulch that has been dyed or been sprayed with any chemicals.



Top soil dressing is aged compost that is very dark, almost black, and rich-looking. When you mulch your flowerbeds and around your plants, it really “dresses up” up your garden — the dark top soil contrasts beautifully with your garden, allowing colors to pop, and giving your garden a finished look.

Chickens love mulch, especially mulch that has been recently added to plants or in flowerbed areas. They scratch around the plants, looking for bugs. As soon as you mulch an area of your garden, your chickens will be immediately attracted to that area. Protect your plants ahead of time, either by surrounding them with chicken wire, placing stone at their base, or fencing your chickens away.



Pine needles — whole, cut up, or shredded — make excellent mulch around plants or shrubs that especially love acidity. Examples include camellias or blueberry bushes. Pine needles also work well in the garden for mulching strawberry plants and large vegetable plants like squash and pumpkins. Whole pine needles, however, take a long time to break down, so they aren't the best ingredient for composting.

Mulch pros and cons: You can buy mulch by the yard, and load it in a pickup truck, or have it custom delivered to your driveway. A standard truck bed holds a yard of mulch, which is equal to about 9 full wheelbarrows. Mulch can be purchased by the bag for smaller garden areas. Mulch can be spread over a desired garden area in a depth usually of 2"-3." Sometimes this expense adds up. Mulch involves some labor on your part, or hiring someone to spread it around.

Walking bark

Walking bark is a good softscape material that can be considered a hardscape or softscape material depending on how you use it in your landscape. As a hardscape material it can easily be used for heavy traffic areas for pathways and entertaining areas. It can help fill in garden areas that are low and tend to stay damp. As a softscape material, it's a heavy-duty mulch around plants and flowerbeds. It's cheap and may even be free, if you know the right landscape professional. Usually it's made up of chipped tree and landscape trimmings. The texture is coarse, and it's very chicken-friendly.



If you obtain walking bark or fresh mulch from chipped tree trimmings, know what exactly is in it first. You don't want to accidentally introduce any diseased, poisonous, or potentially undesirable qualities to your garden landscape, or to your chickens.

Walking bark pros and cons: Walking bark is usually inexpensive to purchase. Walking bark creates an instant woodlands style. Walking bark can last for years, but it looks best when replenished on a regular basis. Chickens love to scratch walking bark, and they can make a mess of it. Walking bark areas can be slippery when wet.

Water Is Key

Good soil health is the first key component of a landscape. Watering is the second most critical key component of your landscape. You can have everything right, and still get it wrong with too much or too little watering.

Here are some factors that determine your frequency and intervals of watering:

- ✓ **Your climate and weather:** for your region of the country.
- ✓ **Your soil texture:** For instance, sandy soil has fast drainage. It needs to be watered more frequently, in shorter time intervals than clay soil.
- ✓ **Your soil structure:** How much space is between your soil particles and how well your soil drains. In other words, does your soil tend to be sandy, silty, clay-like.
- ✓ **The organic matter in your soil:** Organic matter helps retain soil moisture.
- ✓ **The amount of mulch around your plants:** Mulch slows down evaporation around plants.
- ✓ **The type of plants you're watering:** For example, drought-tolerant plants, such as some grasses and succulents, require little water. However, plants like some roses and camellias require regular watering.
- ✓ **The age and size of plants:** young plants need small amounts of water frequently to establish their root systems, which then allows them to grow to their mature size.
- ✓ **How much the plants are growing:** Plants can grow more in different seasons. Many plants (not all) slow down their growth in the fall and winter, and therefore need less water.
- ✓ **The amount of sun, shade, and wind where a plant is located:** a plant growing in a shady spot needs less water than one in a hot sunny spot. A windy spot robs moisture from a plant, and plants can dry out quicker.



Common sense watering tips will further help you in properly watering your landscape. Place plants that have the same water needs together. Water deeply to encourage deep, strong plant roots. Watering deeply means that water is reaching plant roots, not just on the soil surface, and encourages plant roots to grow deeper in the soil for a hearty root structure that can support a healthy mature plant. This ties back to soil structure and how well your soil drains. Allow time for your soil to dry out before you water again, to prevent plants roots from rotting. Turn off automatic water systems before rain or a storm. Check out Chapter 2 for more information on which hardiness zone you live in and which plants will do well there.

It pays to research best watering practices for the plants you're growing, and to customize your irrigation system from that information. For instance, you may want to irrigate a vegetable garden by using strips of manual soaker hose, rather than overhead automatic watering. And you may find that automatic drip irrigation is best for a mature perennial flowerbed, while overhead sprayers, calculated to cover the entire area, may give you great results on a lush green lawn.

Water your landscape in the early morning hours, so roots have time to drink, and there is less water evaporation from the sun. Plant foliage has time to dry during the day, and avoid fungal diseases. In hot weather spells, some landscape might benefit from extra afternoon watering.

The next two sections cover different watering practices and which situations are best for the different options.



Generally, free-range chickens don't interfere with your water irrigation systems. Usually, it's best to do landscape watering in the early morning, when your chickens are inside their coop still sleeping, or busy laying their eggs. Avoid irrigation leaks, excess watering, and wet landscape spots. Chickens don't do well when their feathers are extremely wet, or when they have wet feet. When chickens are wet or damp, they can get sick. The way chickens clean themselves is with dry dirt baths, which lets dry soil cleanse under their feathers.

Many different types of watering systems are available, from simple to sophisticated, and for every budget. Your ideal system really depends on your type of landscape, size of property, budget, lifestyle, and how much time you spend in the garden. Automatic irrigation systems are the most expensive and require a landscape design plan to follow. Hand watering is the least expensive, the most strenuous, and the most time consuming.

Automated irrigation systems

Automatic irrigations systems can be quite diverse and highly technical. Timers turn an irrigation system on and off automatically, depending on how they're programmed. They can be programmed for different landscape zones and different days, and they can have moisture sensors. You can set automatic irrigation systems to use sprays, drip for the base of plants or vegetation, or even soaker hoses. Although these systems are automatic, check them once a month and adjust as you move through different seasons.

Pros and cons of automated irrigation systems: They're perfect for people with busy lives and large gardens. Automated irrigation systems are dependable. Sometimes overwatering occurs, hitting sidewalks and driveways, and with seasonal changes. Problems can go on for long periods of time because these systems are so automatic, they can be programmed to come on in very early hours, and they may not be routinely checked.

Soaker hoses and drip irrigation systems are two popular automated watering options.

Soaker hoses

Soaker hoses are a great way to irrigate your vegetable garden, especially if you're starting vegetables like lettuce or carrots where you want your soil really moist around the seeds. Soaker hoses are also good for shrubs like blueberry bushes that require a lot of water. Soaker hoses can be automated with a timer, too, or they can be manual.

Pros and cons of soaker hoses: Soaker hoses are particularly good for getting seeds started. Soaker hoses are reasonable in cost. Sometimes they're clumsy to move and change up in the garden. They're done if they spring a big hole.

Drip irrigation systems

Drip irrigation is usually automated. You can use different sized tips to regulate water quantities from one gallon to incremental smaller amounts. A small tubing with a desired end tip runs from the irrigation pipeline to the base of a plant. Drip irrigation saves on water evaporation because the watering is focused at the base of the plant. Use drip irrigation on your favorite thirsty rose bushes, or in a drought-tolerant vineyard on each grapevine.

Pros and cons of drip irrigation systems: Drip irrigation is very good for certain plants like large shrubs. Drip irrigation is tedious to put in, because a small tubing and tip must go to every plant. Some plants, like California natives, don't like their bases wet, and don't do well on drip.

Manual watering methods

Sometimes hand watering is the best watering method when location is an issue, or if you have a small garden. Consider this method if the area you're watering is hard to reach with irrigation, is a potted container, or is something like a small orchard where hand watering will suffice.

Hand watering can be accomplished with a watering can, a garden hose, and a hose connected with a sprinkler. Hand watering is also a good method if you collect rainwater in a rain barrel. Collected rainwater is stored in the barrel until you want to access it by opening a garden faucet, usually located towards the bottom of the rain barrel.

Use a garden hose connected to a sprinkler that can be moved around a garden for watering specific spots. This method is great for spot watering, or areas where it is difficult to put in automated watering systems. Keep track of your watering with a timer or an alarm, so you don't forget about it.

Collecting rainwater does a garden good

It's amazing how much rainwater you can collect in a rain barrel. Siphoning collected water from your rain barrel is another method of hand watering. Rainwater has a lot of nutrients in it — much more than city water. If you have the opportunity to set up one or more rain barrels, you can save on your water bill and, at the same time, benefit your garden with natural nutrients. (Just check with your town to find out

whether you have any restrictions with using rain barrels.)

Collecting rainwater is an integral part of the concept of sustainability in your backyard. You can purchase simple to complex rainwater systems online and at local nurseries. After a good rain, go out to see how much rain you collected. It will put a smile on your face.

Hand watering pros and cons: Hand watering is preferred for plants that don't require a lot of water, such as succulents, that have the natural ability to store water for a long time. It's a good method for conserving water when necessary. Hand watering can be inconsistent if you forget to water. Hand watering isn't always exact in how much you're watering. Hand watering can be time consuming, and water can evaporate quickly in heat. If you take a vacation, you may have to enlist someone to water while you're gone.

Fencing Is King

Fencing is extremely important because it provides a perimeter for your property and garden landscape. It sets a boundary that keeps things in — and things out. Fencing is a deterrent to predators, but it isn't always fool-proof. You should not only have a solid perimeter fence, but also be vigilant about maintaining it.

Fencing also functions as protection, especially in free-range chicken gardens. Make the protection of your chickens your number one priority, because chickens have little means of protecting themselves. Some chickens don't have the opportunity to live a long and happy life. Sometimes chickens meet with an untimely tragic death from a neighbor's dog, or the lone coyote that got lucky. Protection is key, beginning with a good perimeter fencing if you intend to garden with free-range chickens.

It is common sense to protect your free-ranging chickens with a perimeter fence as a first line of defense against predators. In some locales it may be difficult to have a fence or impractical to have perimeter fencing. Understand that your free-range or confine range chickens will always be more at risk



of injury and death from predators, than chickens raised entirely within a chicken coop and adjoining secure outside pen.

You can choose from many different fencing materials. A fence is an important part of your visual landscape. A fence can match your landscape style just as much as the hardscape and softscape elements do. You can screen and soften fencing with landscaping, but it's still an integral element of your landscape.



Chickens can fly! Chickens have been known to fly over fences as high as six feet. Although this isn't a normal practice, you can clip one of their wings if it becomes a problem.

There are many factors that may influence chickens to fly over a six foot fence:

- ✓ Young hens can be more flighty and physically capable of flying over a fence, especially when introduced into a new environment.
- ✓ Chickens hear a nearby chicken flock, and are curious to explore.
- ✓ A predator surprise attack can prompt a chicken to fly.
- ✓ Poultry breeds that are known as aggressive foragers, can continue to expand their forage area flying over a fence.
- ✓ A neighbor's unprotected vegetable garden may be too tempting to ignore.

Fencing can be an expensive landscape material, especially if you have a large property. The most common types of fencing are wire and wood. The following sections highlight these and some other fencing materials to consider.

Common wire fencing

Wire fencing comes in different styles, sizes, and metal strengths for various uses. Figure 5-2 illustrates some of the common wire fencing. Most of these wire fencing materials are available at agricultural supply stores and home improvement stores.

Wire fencing is a common fencing material for homeowners, homesteaders, ranchers, and people living in urban areas. Most wire fencing is durable, withstanding weather elements and the test of time. Following are explanations of some of the most common metal fencing options:

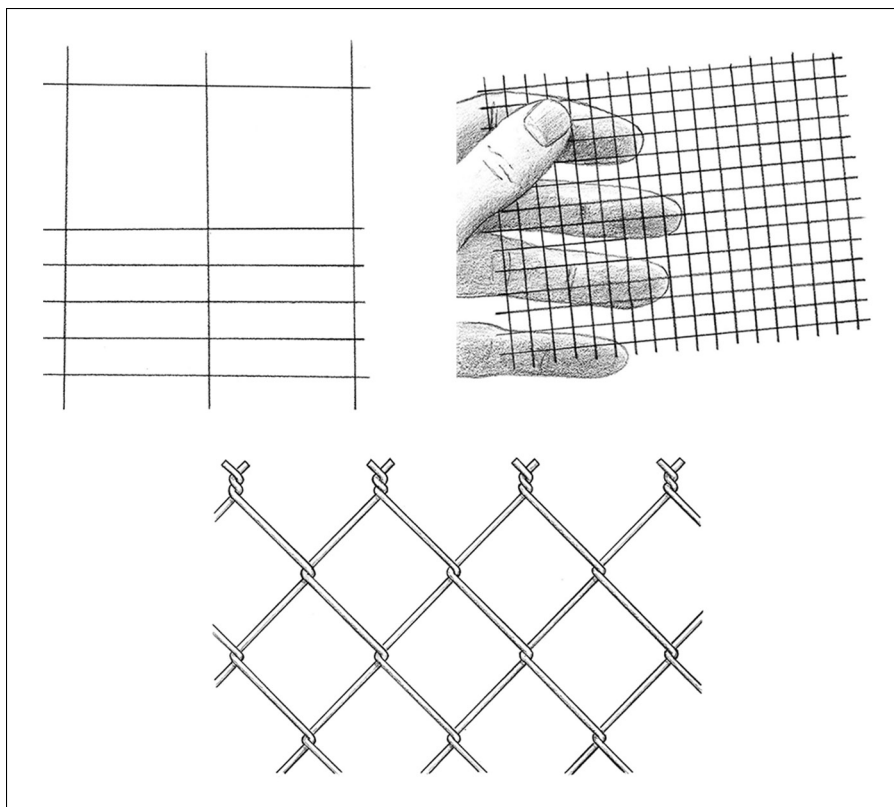


Figure 5-2: Some common wire fencing, clockwise from top left: Rabbit Wire, $\frac{1}{4}$ " wire hardware cloth, and chain link.

- ✓ **Chain link:** Used commercially in landscapes. It's commonly used as periphery property fencing. Usually 6' high with sharp edges on top. Grounded with heavy metal poles. Coyotes and raccoons can potentially scale a standard chain link fence.
- ✓ **Agricultural fencing:** Used on farms and ranches. It's sturdy, and is usually in 4" oblong openings. It isn't always predator proof.
- ✓ **Wire hardware cloth:** Available in different sizes. The $\frac{1}{2}$ " size is perfect for creating a protected chicken outdoor pen, and burying it 1-1 $\frac{1}{2}$ " below soil level. See Figure 2-5 for an illustration. Wire hardware cloth is the ideal fencing material for permanent chicken runs. It also is available in $\frac{1}{4}$ " size as an option for covering and securing small areas like chicken coop windows, or vent areas. Wire hardware cloth is predator proof. Although mice are not predators, they are an unwelcome presence around your chicken coop because of disease, parasites, feed loss and more. Be aware that determined mice can sometimes squeeze through $\frac{1}{2}$ " wire hardware cloth.

- ✓ **Rabbit fencing:** Available in rolls and is 3' high. It typically has smaller 1" x 4" openings on the bottom edge, increasing to larger 4" x 4" openings on top. This fencing is durable, and it requires poles or metal T-bars to stabilize it. This type of fencing is best for surrounding raised vegetable beds, temporary chicken runs, and temporary fencing. If you're lucky, it will keep out rabbits.
- ✓ **Chicken wire:** Available in rolls and is 3' high. It's typically octagonal-shaped wire, a lighter weight wire. It rusts easily, and could potentially be chewed through. It requires poles or stability of some kind. It could be used for temporary chicken runs to protect your plants from chickens. *It isn't effective against any predators.*
- ✓ **Electrical wire:** Creates an electrical circuit that uncomfortably shocks animals and humans when they touch it. It's a high-tension single wire, usually used in conjunction with another type of fence. It's popular for agricultural and ranch purposes. It requires a power source to operate. Sometimes power sources break, power sources can potentially start a fire, and wet vegetation can short out the fence. It's very effective with dogs and large-sized predators. Electric fencing can now be solar powered, too.

Wire fencing is a handy tool material when raising chickens in your garden. Each type of fencing has attributes for different uses. Familiarize yourself with the various types of fencing. Don't be afraid to mix and match wire fencing for the different purposes involved with raising chickens in your garden.

We recommend a tall 6' chain link fence or higher for a perimeter fence. Use wire hardware cloth extensively for covering windows in chicken coops and outside pens. Wire hardware cloth should be used for chicken runs, once again because it is predator proof. Don't be mislead, chicken wire, agricultural wire, and rabbit wire are good for protecting prize plants, or temporary chicken runs, and temporary fencing, but it is not predator proof.

Alternative fencing materials

Wire fencing isn't the only fencing material. Other common options for fencing materials are stucco, wood, and plastic. Here's some more information on each kind:

- ✓ **Stucco:** In some regions, stucco houses are prevalent, and building a stucco wall makes for an eye-pleasing fence. Stucco walls are solid, expensive to build, and permanent. Stucco walls are usually 6' high, yet predators can easily scale and climb over them.

- ✓ **Wood:** Wood fencing is popular and has a nice look. It can be built in different designs. It ages well, but over time termites and weather can weaken wood fences. Large predators can easily push through aging, leaning wood fences, or sometimes scale them.
- ✓ **Plastic:** Plastic fencing comes in many variations. Even chicken wiring comes in a plastic material form. Your white picket fence can even be synthetic. Predators and rabbits can sometimes gnaw through plastic, and sometimes it cracks. Plastic fencing may be a good solution for a temporary run because it's reasonably priced, or for protecting a raised vegetable bed, but it isn't our choice of fencing for protection.



We mention these alternative fencing materials because they may be more prevalent in your part of the world. Fencing is extremely important when it comes to protecting your chickens in your garden and in their coop. Ultimately, it's up to chicken owners to proactively keep their chickens safe.

Look to Chapter 10 for tips on specialty fencing for predators.

Chapter 6

From Garden to Pasture: Perfect Plantings for All Your Needs

In This Chapter

- ▶ Defining an ideal backyard garden landscape for free-ranging chickens
 - ▶ Perusing examples of plants that serve a function in a chicken garden
 - ▶ Describing free-ranging chickens in pastured open areas
-

Within your garden setting and landscape you want to create a garden structure for your overall enjoyment and benefit as well as for your free-ranging chickens. Luckily, what's pleasing for you is also beneficial for the health and well-being of your chickens.

In this chapter we discuss the importance of creating a layered plant ecosystem, the importance of putting a garden structure, or permanent landscape, in place, and choosing functional plants that provide a specific purpose rather than just aesthetic qualities. We point out how many plants can be multifunctional in a garden landscape, perhaps by providing shelter for chickens and being fragrant, too. We list plant examples by function to help you understand the concept of using many diverse plants for many functions. We also discuss non-ornamental garden landscape settings and how they pertain to free-ranging chickens in open areas such as pastures.

Gardening across this country and the world is so diverse, with so many different growing zones and climates, that covering it all in this book is impossible. Every region has local resources in the form of garden experts, landscape designers, books, nurseries, garden clubs, and extension offices. Use those resources to find out what types of trees, shrubs, perennials, annuals, and landscape in general is best suited for your locale, and of course, your garden style.

Creating a Layered Landscape

In Chapter 5, we discuss how softscape elements are most beneficial added in layers. Think of your style of gardening as an integrated plant landscape with each layer working together. Imagine each tree or plant as building a plant community with symbiotic relationships, rather than isolated by itself.



When we use the term *softscape*, we're talking about all the living materials such as plant materials, flowerbeds, mulch, and soil. A layered landscape is important and beneficial because each layer builds upon the next layer providing elements such as shade, plant nutrients, and mulch. Think of your garden in beneficial layers from the tallest trees in your yard down to the bulbs you dig in the ground.

A forest grows in layers naturally because each tree or plant fills a niche that helps other trees and plants grow. Tall forest trees reach for the sun and provide shaded canopies for others. Smaller trees, shrubs, and perennials closer to the forest floor receive dappled sunlight and moisture for growth.



A harmonious, thriving garden is full of clusters of symbiotic plants called *guilds*. In biological terms, symbiotic plants are different plants that are grown in close proximity of each other for mutual advantage. These symbiotic plants build guild communities. In ecological terms, a guild is a group of species that have similar requirements to thrive and play a similar role within a plant community.

An example of a guild is a small tree with tulips and daffodils planted underneath for weed suppression, and used as a natural support for a beautiful climbing rose. An added benefit is that, to some degree, planted daffodils deter gophers, rabbits, and deer by sending out a year-round toxic fragrance that animals sense and move away from. If animals were to bite into the actual bulbs, the bulbs would burn and irritate sensitive mouth and cheek tissues.

Work with what you have in your garden and on your property. As we discuss in Chapter 4, you can change some — but not all — elements. Know your garden and your property and their particular characteristics. If you have a known low, wet spot, plant something that thrives in a consistent wet spot, such as blueberry bushes or a willow tree. If you have a storybook view, don't block it by planting a sycamore tree that can become very tall.

The positives of a layered landscape

Chickens fit in well with a layered plant landscape. Chickens thrive because this type of ecosystem provides shelter, food, and protection. This layered

plant landscape is similar to subtropical environments from which some wild chickens originated. Imagine your garden as a simulation of this environment. Don't forget to add the necessary components of a fresh water source and a quiet place for hens to lay their eggs, such as a nearby chicken coop.

The same layered plant landscape that's so natural for free-ranging chickens is beneficial for you, too. A layered plant landscape provides you with the same attributes of shelter, natural shade, edibles, aesthetic value, and sanctuary. Figure 6-1 illustrates a layered plant landscape.

Shelter means protection from your environment, such as blustery winds, strong sun, or even close neighbors. Shade from a tree's natural canopy is a gift on a hot summer day. The same food you enjoy growing for yourself can be potential food for your chickens, too. Many shrubs that have berries that attract birds can be food for your chickens. A carefully planned layered plant landscape can be visually stunning and soothing to the soul.

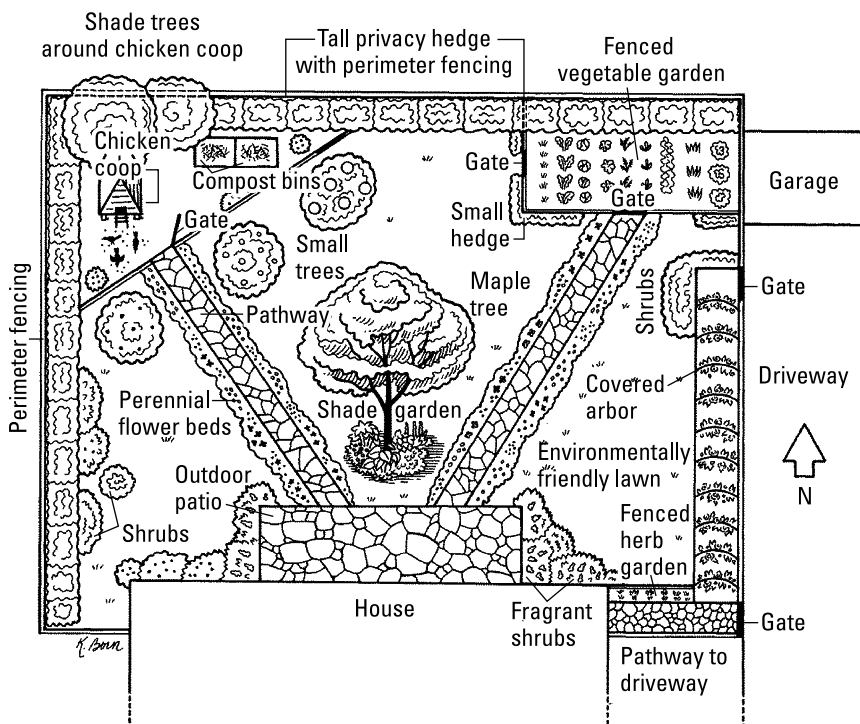


Figure 6-1:
A well-layered landscape.

The negatives of a non-layered landscape

Figure 6-2 paints a picture of a non-layered plant ecosystem to show you a type of environment that wouldn't be good for free-ranging chickens. This environment doesn't provide shelter, protection, and a variety of food.

Figure 6-2 isn't a good scenario for free-ranging chickens because they have only lawn grass or one type of food on which to forage. They have no protective and screened shelter other than shade from the maple tree in the center of the yard. The maple tree's first branches aren't low to the ground; in fact, its lateral branches start at eight feet high. The chickens have no protective shrubs along the fence or any other area in the backyard to hide or escape from a predator. The landscape gravel may attract the chickens toward the house for scratching and dust baths. Chickens are highly visible in the yard at all times with no landscape shelter. The non-layered landscape is not as enjoyable as a layered landscape for one to appreciate and spend quality time in either.

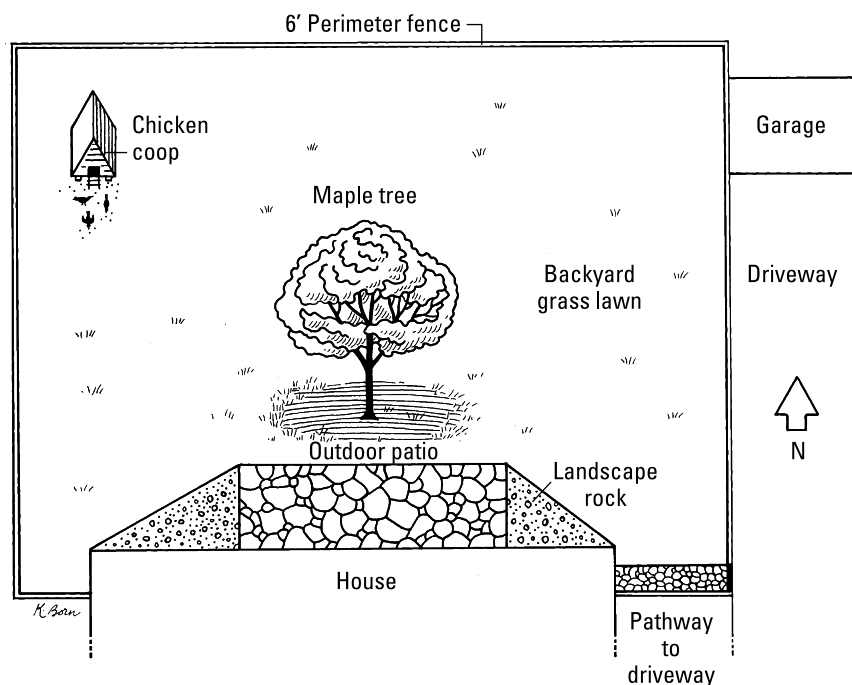


Figure 6-2:
A non-layered landscape.

Structure in the garden

Besides creating a layered plant landscape, gardeners want to consider structure in the garden for themselves and their chickens. Structure is the “bones” of the garden or the bare skeleton of a garden using landscape plants. The structure in the garden consists of permanent landscape such as a hedge or a row of trees.

Garden structure is what anchors and remains constant in a garden. You may have seasonal changes in color, blooms, flowers, fruit, and so on, but the trees, shrubs, hedges, or perennial vines remain in the garden throughout the year. Their structure consists of trunks, branches, lines, and so on. Structure in the garden is usually the larger landscape layers of mature trees, hedges, and shrubs.

In Chapter 1, we mention that you have many choices of styles to choose from when creating your garden style and in planting your garden structure. Planting a garden structure is not only a foundation for your garden or property that will last for years, but also an investment in purchasing and planting all the landscape. Choose carefully, and consider hiring a landscape professional to guide you.

Implementing structure in the garden is one of the first phases of a garden and landscape design. An example of structure is planting a permanent screening hedge in front of a chain link fence across the entire back of your property or strategically planting aesthetically pleasing shrubs along a side of your home to create a softer look.

Structure such as mature trees and shrubs with deep roots are less impacted by free-ranging chickens than smaller shallow-rooted shrubs, perennials, and annuals.



The smaller the plant in your chicken garden, and the more shallow-rooted it is, the more likely free-ranging chickens will damage it. You may have to take precaution to protect these types of plants with temporary fencing or chicken-resistant methods. We cover chicken-resistant plants and methods in Chapter 8.

After your garden structure with trees and shrubs is in place, continue to layer your garden with perennials, edibles, vines, herbs, bulbs, and annuals. When following your garden design, remember to check that your plants are non-poisonous to your free-ranging chickens.

Chickens and plant toxicity

Plants use toxicity as a natural defense to avoid being eaten and to ensure survival to propagate. Other plant defenses are thorns, spines, sap, and so forth. In other words, different parts of a plant can be potentially harmful, such as seeds, berries, or leaves. This plant defense has many degrees of toxicity and can affect humans and animals differently. Variables such as an amount consumed, the part consumed, the weight of the animal consuming it, along with the animal's tolerance to consume a toxic plant, all come into play.

You might be surprised to know that many common landscape plants have a toxicity element to them, such as boxwood, foxglove, hydrangea, juniper, privet, and sweet peas. This is extremely important to be aware of when free-ranging chickens, and of course keeping other family pets. When introducing new plants into your garden, research and check if they could be potentially toxic to your chickens and family pets.

Chickens free-ranging generally will not eat potentially toxic plants in your yard, they seem to have an innate ability to understand what is healthy for them, and what is not. For the most part you do not have to worry about mildly toxic plants and your chickens, they will not bother with toxic plants. While sheep, goats, and other livestock animals will eat toxic plants, chickens rarely do. You should worry more about

accidentally throwing something toxic into their coop and having them gulp that down in a rush.

With that said, chickens can still poison themselves by eating something very toxic by mistake. There are many, many lists of toxic plants for chickens available on the Internet. These lists are so extensive that you might wonder is there anything free-ranging chickens can eat. We caution you to understand the source of these lists, and note if they are from a reliable source and note a university or a professional. Many of these lists are not entirely accurate and may not be accurate for free-ranging chickens. In Chapter 8, we list some of the more deadly toxic, poisonous plants to chickens, that you should be aware of.

Always keep your chickens well-fed with laying feed, avoiding the possibility of them eating potentially toxic plants because they are underfed. Use common sense and never confine them or house them close to potentially toxic plants, where they might be tempted to try them if bored or stressed.

In the event that you know you have a landscape planted with extremely toxic plants, and want to raise chickens, consider removing the plants or keeping your chickens confined to their chicken coop and secure outside pen full time.

Basic garden terms for a layered landscape

Whether you're an experienced gardener, or an enthusiastic newcomer to gardening, it helps to know some basic garden terms to help you further understand garden structure in a garden for you and your chickens.



- ✓ **Annual:** Plants that live less than a year, or through a few seasons. Annuals can bring bright seasonal color to a garden. Annuals are also great as “fillers” in any holes in a garden landscape design. Annuals are generally shallow-rooted and vulnerable to chickens scratching around them. An example is a sunny, bright sunflower, *Helianthus annuus*.
- ✓ **Bulbs:** Rounded storage organs that are usually planted in the ground, although some can be forced and grown in containers. Bulbs are typically planted in the fall for an entrance in the spring. After being planted in the ground, bulbs grow plants that flower and bloom every year. Take care to protect young shoots of bulbs emerging in the soil from chickens scratching. An example is a daffodil, *Narcissus*.
- ✓ **Deciduous:** Trees, shrubs, or plants that shed their leaves annually, usually fall into wintertime. An example is an apple tree, *Malus spp.*

Deciduous trees planted in a south corner close to a house do double duty throughout the year. In summer, they can provide shade and cooling of a house; in winter, fallen leaves leave the tree barren and open for warm welcoming sun. Chickens depend on the shade and canopy, predator protection from the skies that deciduous trees provide through the majority of the year.
- ✓ **Evergreen:** Trees or shrubs that retain their green foliage or leaves throughout the year. Evergreen trees and shrubs are critical in sheltering and protecting chickens in the garden. An example is a cypress, *Cupressus*, tree.
- ✓ **Ground cover:** Low-growing, usually dense plants that spread out and cover a ground area. Ground covers can be helpful in weed suppression, and some species are wonderful chicken-resistant plants. An example is Scotch moss, *Sagina subulata*.
- ✓ **Herbs:** Wonderful plants that have leaves, seeds, or flowers that can enhance culinary flavor, be used for medicinal purposes, and have perfume fragrance qualities. Herbs can be annuals or perennials depending on the individual variety, and your growing zone. Herbs are key plants in a chicken garden for your chickens’ general health, laying stimulants, and parasite control. An example is rosemary, *Rosmarinus officinalis*.
- ✓ **Hedge:** A boundary or barrier created by a living landscape planted closely together. Hedges offer privacy, protection, and screening. Hedges are multifunctional and an excellent method of layering a chicken garden. An example is privet, *Ligustrum spp.*
- ✓ **Ornamental grasses:** Ornamental grasses have become very popular in landscape design, bringing a natural look to a garden. These grasses can be planted along pathways or an edge of a flowerbed. Planted in mass, they resemble a meadow-like appearance. Ornamental grasses come in many sizes, shapes, and colors. Spiked grasses usually have a seed head on the end. They’re generally easy to maintain and add wonderful texture

and movement to a garden. Some grasses can provide protection and food for chickens in the garden. An example is feather grass, *Stipa*.

- ✓ **Perennial:** A term for a plant that can live for many years. Perennials can be workhorses for you in a chicken garden. Generally, chickens scratching don't harm mature perennials. Perennials can provide shelter and food for chickens in a chicken garden. An example is a rose bush, *Rosa*.
- ✓ **Shrub:** A plant that's usually smaller than a tree and has several main stems starting at the base. Many shrubs are perennials. Shrubs are critical in creating a working layered plant ecosystem. Shrubs can be multifunctional in providing protection, food, and shelter for chickens in the garden. An example is Breath of Heaven, *Coleonema*. See a photo on page 5 of the color section.
- ✓ **Trees:** Woody perennials that usually have a single trunk as a base and lateral branches that start a distance off the ground. Trees can live for decades or more. Trees can be deciduous or evergreen depending on their variety. Trees come in many sizes, shapes, and heights. Many trees come in dwarf varieties that limit growing height and ultimately growing space and maintenance for the gardener. Trees are critical for garden structure and design. Trees are multifunctional and can provide valuable protections, shelter, and food for a chicken garden. An example is an oak tree, *Quercus*.
- ✓ **Vine:** A woody-stemmed plant that climbs or trails. Vines can be annual or perennial depending on their variety. Vines can provide food, screening, and shelter in a chicken garden. An example is the common grapevine, *Vitis spp.*



Plant your garden structure that is compatible with your geographical location and your plant hardiness zone. This zone outlines the optimum environment in which a plant, shrub, or tree will thrive and is tied to temperature ranges. In Chapter 3, we cover plant growing zones in more depth.

Choosing Plants That Are Functional

In addition to having a layered plant ecosystem and creating a garden foundation anchored with strong structure by using trees, shrubs, and perennial plants, consider this third key component — choosing plants that are functional according to your needs and specifically helpful when free-ranging chickens.

Consider choosing plants that are multifunctional for your chickens, by providing protection, shelter, screening, fragrance, medicinal qualities, and even food in the form of berries, leaves, and seeds.

The plant types and plant lists we give in this chapter are intended to give you examples and a concept to implement in your chicken garden. These plant lists aren't all-inclusive, but listed in limited numbers. If you don't see many types of plants for your region, research your particular zone or seek local professional advice.

Plants that benefit the soil

Specific types of plants return valuable nutrients back into the soil. In Chapter 2 we mention that composting is valuable to the health of your soil. Consider incorporating nitrogen-fixing plants, dynamic accumulators, and cover crops in your chicken garden for their soil enhancing attributes in addition to valuable composting.



- ✓ **Nitrogen-fixing plants:** Try adding natural nitrogen — instead of chemical nitrogen in the form of chemical fertilizers — to a chicken garden by including trees, shrubs, perennials, and annuals that are natural nitrogen-fixers. Nitrogen, which is so critical to plants' well-being, is freely available from the air. Nitrogen-fixing plants actually pull nitrogen from the air with the help of beneficial bacteria located in their root nodules, hence accumulating nitrogen. Examples include, New Jersey Tea shrub, Siberian pea shrub, and Dutch white clover.

Many of the legume family are nitrogen-fixing plants. Peas and beans, which are part of the legume family, are poisonous to chickens unless they're cooked first. Use extreme caution when feeding legumes to your chickens.

- ✓ **Dynamic accumulators:** *Dynamic accumulators* are plants that draw nutrients from deep in the soil up through their roots and leaves and make them available to other plants. They can help improve your soil by adding a specific nutrient your soil may be lacking. Grow them as a cover crop that enriches and aerates your soil, cutting back and leaving leaves and stems creates a mulch. They help rev up a compost pile, and you can use them as companion plants to improve the health of nearby plants. Although many dynamic accumulators look like weeds, don't be fooled about the nutrient value they bring to soil. Examples of dynamic accumulators are comfrey, chickweed, dandelions, garlic, fennel, yarrow, parsley, borage, nettle, thistle, and marigolds.
- ✓ **Cover crops:** A diverse group of plants, also called green manure, cover crops are planted more for their soil-enhancing attributes rather than for eating. They improve physical characteristics of soil, offer weed suppression, control diseases and pests, and return valued nutrients to the soil. Many cover crops are good plants for chickens. Examples are clover, buckwheat, and oats.

Plants that shelter a chicken garden

Mature trees, by their very height and presence in a landscape setting, provide shade for your chickens, and also offer visibility shelter from sky predators, such as hawks, owls, and other birds of prey. Additional planting of lower protective shrubs among your trees adds to the layering effect and plant density that shelters chickens.

Trees come in many sizes, from small and ornamental to massive and well-structured. Trees can be evergreen or deciduous. In a garden with free-ranging chickens, you want to choose trees that provide shelter, canopy shade, and dappled sunlight for other lower garden landscape.

Shrubs play a very important role in chicken gardens, because chickens like to spend time under them. Shrubs that protect and shelter chickens are usually, but not always, evergreen and can weep and drape to ground level. Chickens can actually conceal themselves under large shrubs, and even relax with dust baths under them. Shrubs can be very showy, ornamental, and a good fit with your chosen garden style.

Suggestions for sheltering trees and shrubs

Here are suggestions for planting trees and shrubs that protect in a chicken garden.

- ✓ Trees are most practical for shelter in a large garden landscape space.
- ✓ Consider planting native trees and shrubs in your garden landscape because they're naturally suited to your climate, and generally are low maintenance, requiring less water, fertilization, and pruning.
- ✓ Carefully consider mature sizes of trees and shrubs, and how they fit in your intended space.
- ✓ Trees and shrubs that have four-season interest easily create a beautiful garden landscape throughout the year.
- ✓ Research what you're planting in your garden landscape isn't poisonous and extremely toxic to chickens. In Chapter 8, we list some of the common deadly poisonous plants to chickens.

Tree examples that shelter

The following trees offer shelter to your chickens:

- ✓ **Birch:** *Betula*. Deciduous trees. Zones vary by species. Striking bark.
- ✓ **Buckeye and horse-chestnut:** *Aesculus*. Deciduous trees or shrubs. Zones vary by species.

- ✓ **Elm:** *Ulmus*. Deciduous or evergreen trees. Zones can vary by species. Beautiful shade trees; can be prone to disease.
- ✓ **Magnolia:** *Magnolia*. Deciduous and evergreen trees and shrubs. Zones vary by species. Magnificent ornamental trees.
- ✓ **Maple:** *Acer selections*. Zones 3–9. Many varieties. Can reach massive size. Striking foliage colors.
- ✓ **Olive:** *Olea europaea*. Evergreen trees. Slow growing. Silvery gray foliage. Fruit and fruitless varieties.
- ✓ **Pine:** *Pinus*. Evergreen trees. Zones vary by region. Many varieties with individual characteristics. Can be massive in size.
- ✓ **Serviceberry or Juneberry:** *Amelanchier*. Deciduous shrubs or small trees. Berries. *Amelanchier x grandiflora* “Autumn Brilliance” is a stunning four-season tree.
- ✓ **Spruce:** *Picea*. Evergreen trees. Zones vary by species. Large and dwarf varieties. Can also be grown in a container.
- ✓ **Sycamore or plane:** *Platanus*. Deciduous trees. Zones vary by species. Tree varieties can vary in size. Can be massive in size. Known for their striking dappled bark.

Shrub examples that shelter

Consider the following shrubs when you want to add shelter to your chicken garden:

- ✓ **Barberry:** *Berberis darwinii*. Evergreen shrub. Zones 5–9. Very showy evergreen with fountain like growth. Dark blue edible berries. Can be invasive in some areas.
- ✓ **California wild lilac:** *Ceanothus*. Evergreen shrubs or ground cover. Zones 5–9. Many varieties. Hardy California native, but also found in other parts of the United States. Hardy, drought tolerant. Beautiful shades of blue flowers in late winter and early spring.
- ✓ **Camellia:** *Camellia*. Evergreen shrubs or trees. Typically zones 4–9. Prefer shade. Beautiful showy flowers.
- ✓ **Juniper:** *Juniperus*. Evergreen shrubs and trees. Zones vary by species. Very versatile easy-to-grow plant. Comes in many forms and shades of foliage. Junipers in a landscape are beautiful and hardworking.
- ✓ **Lilac:** *Syringa selections*. Deciduous shrubs. Zones vary by species. Many pluses with this shrub with beautiful flowers, fragrance, and foliage.

- ✓ **New Jersey tea:** *Ceanothus americanus*. Deciduous shrubs. Zones 4–8. Compact, low shrubs up to three feet tall. Easy to grow and drought tolerant. Fragrant, sweet flowers. A native shrub that can naturalize. A great example of a nitrogen-fixing shrub.
- ✓ **Rockrose:** *Cistus*. Evergreen shrubs. Zones 8–11. Drought tolerant. Showy flowers.
- ✓ **Plumbago:** *Ceratostigma*. Evergreen shrub and ground cover. Zones 9–11. Blooms spring through early winter.
- ✓ **Siberian Pea Shrub:** *Caragana arborescens*. Deciduous shrub. Zones 2–9. A great ferny, weeping shrub which tolerates dry and cold conditions. It has small yellow fragrant flowers and seedpods chickens like. It is a good example of a nitrogen-fixing shrub.
- ✓ **Viburnum:** *Viburnum burkwoodii*. Semi-evergreen shrubs. Zones 5–8. Many pluses. Fragrant, showy flowers. Good for windbreak and privacy screening.

Plants that protect in a chicken garden

Another form of plant protection for free-ranging chickens is plants that have spikes, thorns, or other objectionable physicality. Chickens seem to be able to maneuver around and under these intimidating plants, and they give predators pause in pursuit. An example is a thorny floribunda rose, *Rosa*. Of course, you, your family, and friends have to be careful of the same thorns when pruning and walking by them.

Suggestions for plants that protect

Some things to consider when planting for protection:

- ✓ Someone is going to have to maintain these plants. Are you willing, or will you hire someone?
- ✓ Often, these types of plants are characteristically invasive. Research, and know what you're planting.
- ✓ Be specific about what you're protecting your chickens from, and plant accordingly.

Plant examples that protect

The following plants offer protection to your free-ranging chickens:

- ✓ **Bougainvillea:** *Bougainvillea*. Evergreen shrubby vines. Zones 9–11. Thorns for protection. Come in a variety of colors.

- ✓ **Cherokee rose:** *Rosa laevigata*. Zones 7–10. The state flower of Georgia. Native Americans widely distributed this plant, which influenced the name. Dense with excessive thorns that are curved. Blooms once a year in early spring with a profusion of large, pure white blooms with a yellow center. Resistant to deer and the usual rose pests. Produces large rose hips. A great barrier and protection rose with beauty.
- ✓ **Darwin barberry:** *Berberis darwinii*. Evergreen shrubs. Hardy to Zone 7. Very attractive shrubs with arching branches. Yellow flowers in the spring and edible dark purple fruit, which chickens like, in July to August.
- ✓ **Firethorn:** *Pyracantha coccinea*. Evergreen shrubs. Zones 6–9. Thorns to protect. Vibrant orange berries delight from late summer to fall. Chickens like these berries.
- ✓ **Roses:** *Rosa*. Roses of all forms with thorns. Climbing roses, ground cover roses, Floribunda roses, wild roses. Rose hips are food for chickens.
- ✓ **Sea buckthorn:** *Hippophae rhamnoides*. Deciduous shrubs. Hardy to Zone 3. A good vandal-resistant barrier hedge with dense, stiff, and very thorny branches. It has edible, nutritious, and striking orange berries that chickens will eat.

Plants that screen in a chicken garden

It's important to use landscape for screening where it's necessary. Assess how small or big a space you need to screen. Landscape for screening comes in many different sizes, shapes, and characteristics. A tall vertical space requires a different plant for screening than a wide, somewhat low space.

Screening landscape functions to hide an area that may be undesirable or an eyesore. Screening is also a form of privacy, such as screening a close neighbor. Screening plants can differentiate your chicken coop and composting area aesthetically from your home and social areas, creating a garden room. Landscape for screening is also beneficial in muffling noise from your chickens, your neighbors, or your social events.

Suggestions for plants used for screening

Factors to consider when planting trees or shrubs for screening:

- ✓ Match your screening space with an appropriate sized tree or shrub.
- ✓ Choose trees and shrubs that are complementary to your garden style.
- ✓ Consider trees or shrubs that protect as well as screen.
- ✓ Know how long your trees and shrubs take to mature, and make sure their height at maturity matches your needs.

Plant examples that screen

Consider the following plants when making a screening space:

- ✓ **Bamboo:** *Bamboo*. Giant grasses. Zones vary by species. Many different types, sizes, and characteristics. Bamboo is a good screen, but some types are invasive.
- ✓ **Cypress:** *Cupressus*. Evergreen trees. Zones vary by species. Many types of wonderful varieties and sizes. Some varieties can reach 40–60 feet. Need little pruning.
- ✓ **Ficus:** *Ficus*. Evergreen and deciduous trees and shrubs. Zones vary by species. Can provide a dense hedge quickly. Can be invasive.
- ✓ **Podocarpus:** *Podocarpus*. Evergreen shrubs or trees. Zones vary by species. A very versatile shrub or tree known for its foliage. Can be easily shaped, and grown as a hedge.
- ✓ **Privet:** *Ligustrum japonicum texanum*. Evergreen shrub. Zones 7–10. It is a vigorous upright compact shrub with spring white showy flowers, followed by dark black berries. Chickens like these berries. Great for hedges, screens, and as a wind break.

Plants that add fragrance in a chicken garden

Planting fragrant plants in your garden and landscape is pleasing. The ability to smell is an important sense, and it contributes to a desirable garden ambience. The smell sense is very powerful, and can evoke strong childhood memories or a favorite place.

When raising chickens in a chicken garden, make sure your chickens are managed well to keep odors away. Well-managed chickens have their manure removed every day and composted, the compost bin turned regularly, and a flock size that fits the parameters of your chicken coop and free-ranging square footage. However, even well-managed chickens may smell from time to time, from unusual weather, strong winds, or after a drenching rain. Even wet spilled feed mingled with wet manure droppings can occasionally happen and create a strong sour smell. One way you can hedge potential odors is by planting fragrant plants in your garden near your chicken coop and other high-traffic areas.

Suggestions for plants used for fragrance

Fragrant plants come in many forms, such as trees, shrubs, roses, vines, perennials, herbs, bulbs, and annuals. Here are suggestions for placing fragrant plants for the optimum benefit in your chicken garden:

- ✓ Plan for sequential fragrant blooms throughout your growing seasons.
- ✓ Optimize your paths and stepping stones with fragrant ground covers that release their scents when stepped upon.
- ✓ Position fragrant plants under house windows and surrounding patios.
- ✓ Locate fragrant plants near a garden bench or resting area in your garden.
- ✓ Just like pathways, arbors and trellises create a soothing experience for anyone near them when they include fragrant plants.
- ✓ Scent is always strongest *downwind*, or the direction the wind is blowing, so know your prevailing winds when strategically planting your fragrant plants.

Plant examples for fragrance

Inhale deeply and enjoy the fragrances of the following plants:

- ✓ **Citrus:** *Citrus*. Evergreen trees and shrubs. Zones vary by species. All varieties are fragrant. Four-season interest with foliage, flowers, and decorative fruit. Many citrus trees have thorns. (It is important to not feed citrus to chickens; see Chapter 8 for edibles for chickens.)
- ✓ **Lilac:** *Syringa selections*. Deciduous shrubs. Zones vary by species. Many pluses, including beautiful flowers, fragrance, and foliage.
- ✓ **Mock Orange:** *Philadelphus 'Belle Etoile'*. Deciduous shrub. Zones 4–7. A beautiful arching shrub that reaches 10 feet in maturity. Bowl-shaped white fragrant flowers bloom in summer time. It can be mildly toxic to chickens.
- ✓ **Myrtle:** *Myrtus communis*. Evergreen shrub. Zones 8–11. This rounded shrub makes a good informal hedge or screen. Mildly toxic to chickens, it has sharp spines. Very aromatic white flowers that bloom in summer, followed by a bluish black berry. This berry can be dried and used as a spice for culinary use. Studies show chickens don't eat it.

- ✓ **Star magnolia:** *Magnolia stellata*. Deciduous shrubs. Zones 5–9. Easy to grow with beautiful white starburst flowers that perfume the air. It can be trained into a small tree.
- ✓ **Viburnum:** *Viburnum burkwoodii*. Semi-evergreen plants. Zones 5–8. Many pluses. Fragrant, showy flowers. Good for windbreak and privacy screening.

Plants medicinally beneficial to chickens

Medicinal plants aren't limited to human use. Medicinal plants can benefit your chickens too. Many medicinal plants are multifunctional herbs. Besides having health and healing properties, many medicinal plants have beautiful flowers, benefit your soil, some are a de-worming agent, and some have properties that deter external chicken parasites like lice and mites.



Adhere to the specific recommended method of preparing your medicinal herbs for proper extraction and processing of its medicinal qualities before administering it to your chickens. For instance, some medicinal plants can be eaten right out of the garden, while others need to be harvested and steeped in water like a tea.

Plant examples of herbs that are beneficial for poultry general health and egg laying

Interspersing medicinal plants in a chicken garden can be beneficial. Here are some more suggestions for growing medicinal plants in your garden:

- ✓ Many herbs — such as fennel, thyme, marjoram, mint, nasturtium, sage, and parsley, which are good for you and tasty in your culinary efforts — are great for chickens, given in moderation, for their general health and to stimulate laying.
- ✓ Try growing insect-repellent herbs like fennel, rosemary, catnip, feverfew, and lavender close to chicken coops, chicken runs, and high-traffic areas. Chickens benefit from eating these plants and brushing up against them.

Plant examples of natural de-wormers

The following plants are natural de-wormers:

- ✓ **Garlic:** *Allium sativum*. Perennial from bulbs. Can be a preventive for worms and is considered an organic de-wormer for chickens. Place crushed garlic pieces in your chickens' waterer for a week's time. Also acts as an insect repellent.



Don't feed garlic directly to your hens, because their eggs will take on a garlic flavor. Remember to put a few cloves of crushed garlic in their water for worming, using moderation.

- ✓ **Nasturtium:** *Nasturtium majus*. Annuals and perennials. Zones vary by species. A very common old-fashioned garden plant that has many redeeming qualities. Bright, sunny, slightly spicy edible flowers are perfect to add to salads and for your chickens to eat. This is a great herb for chickens, combining antiseptic, antibiotic, and insect repellent qualities. Its seeds also have a natural de-worming attribute for chickens.
- ✓ **Nettle:** *Urtica species*. Nettle often gets a bad rap because of its stinging properties when handled, but is a great dynamic accumulator, a natural chicken laying stimulant, and a *good preventive* for worms. Nettle can be harvested and dried, or boiled in water and steeped like a tea. Let mixture cool entirely and add to your chickens' laying mash.

Plant examples of natural insect repellents

Consider these plants when you're looking for natural insect repellents:

- ✓ **Catnip:** *Nepeta cataria*. Perennials. Hardy to Zone 3. Known for attracting bees and cats. A good insect repellent for lice and ticks on chickens. Can be stunning as a mass border in a garden.
- ✓ **Feverfew:** *Tanacetum parthenium*. Perennials. Zones vary by species. It produces lots of small daisy-like flowers and easily reseeds itself in the garden. Excellent insect repellent; by steeping flowers and leaves like a tea. Spray this cooled tea mixture as an insect repellent.
- ✓ **Lavender:** *Lavandula species*. Evergreen shrubs. Zones vary by species. Lavender is a very popular and well-known shrub for its fragrance and vibrant purple flowers. It's popular for culinary aspects, such as flavoring sugar or as a dried herb for meats and sweets. Lavender is found in many soaps, perfumes, and bath products because it's known to have a soothing and calming effect. Lavender is also a good insecticidal herb. Put dried lavender in your chicken coop for an enhancing and calming fragrance.
- ✓ **Mugwort, *Artemisia vulgaris* and wormwood: *Artemisia absinthium*.** Perennials. Hardy to Zone 4. Beneficial as insect repellents for chickens when grown near a chicken coop and surrounding area.

The preceding list of insect repelling herbs can also be cut fresh and placed around your chickens, or they can be dried, and added to their feed.

Plants that tackle problem areas in chicken gardens

Most gardens contain a problem area or two. Most likely the two largest types of problem areas in a chicken garden are caring for a slope and what to plant in consistent damp or wet spots. Implementing functional garden structure that serves a purpose is one helpful solution.

A slope is a problem area in a chicken garden because chickens love a slope and gravitate toward it, continually scratching and creating dirt baths in that area. A barren slope is open to soil erosion and loss of soil nutrients.

A damp or wet area is problematic in a chicken garden because chickens don't do well with continual dampness, and it can create a large unwanted muddy area where nothing will grow. The following sections give you some suggestions for plants that help with both of these problem areas.

Plant examples for slopes

If you need a fix for a slope, consider these plants:

- ✓ **California wild lilac:** *Ceanothus*. Evergreen shrubs and groundcover. Zones 8–10. Easy care, drought tolerant. Beautiful spring-blooming flowers.
- ✓ **Honeysuckle:** *Lonicera japonica*. Deciduous vines. Zones 4–11. Fragrant showy flowers. Especially good for ground cover erosion control. Honeysuckle can be valuable in a chicken garden, but it has known toxic qualities to chickens. Chickens generally avoid it in free-ranging situations. Never feed it directly to your chickens.
- ✓ **Ice plant:** *Malephora*. Succulent perennials. Zones vary by species. Durable perennial for heat, winds, and fire. Drought tolerant. Low maintenance. Plants bloom over a long time.
- ✓ **Western sword fern:** *Polystichum munitum*. Zones 3–8. Most common fern of Western forests. Beautiful, long, lush, dark green fronds. Partial or full shade.

Plant examples for damp areas

The following plants are good choices for damp areas:

- ✓ **Alder:** *Alnus*. Deciduous trees. Zones vary by species. These nitrogen-fixing trees like ample water and can tolerate flooding. They can reach heights of 40 to 70 feet depending on variety.
- ✓ **Cyperus:** *Cyperus*. Perennial. Zones vary by species. Graceful grass-like plants with striking form. Can be invasive.

Chickens don't do damp

Prolonged dampness can potentially cause many diseases, such as coccidiosis, and respiratory problems in your flock. In other words, damp areas are a ripe medium for disease to get started amidst your flock.

Dampness mixed with manure and feed smells dank and rancid, something very unappealing for a garden setting.

Dampness also is a perfect medium for fly maggots and mosquito populations to soar.

Take care of your damp area by taking steps to stop the wet and dampness, such as fixing any water leaking, grading your garden, installing a drain if necessary, and using landscape that likes a lot of water. If all else fails, fence your chickens away and out of this area.

- ✓ **Gunnera:** *Gunnera tinctoria*. Perennials. Hardy to Zone 8, can be nurtured in Zones 6 and 7. Striking, colossal, stunning leaves.
- ✓ **Horsetail:** *Equisetum hyemale*. Perennial. Zones 7–10. It is a very primitive, structure plant with 4' upright slender hollow stems. It can be extremely invasive. Horsetail is mildly toxic to chickens.
- ✓ **Willow:** *Salix*. Deciduous trees. Zones vary by species. Stunning, weeping trees that are fast-growing, yet can be weak-wooded and short lived. Thrive near water, but don't plant near sewer lines.

Chickens in Pastured Open Areas

We recognize that not everyone raises chickens in a chicken garden or a garden landscape environment. You may have small farms, acreage, and pasture to free-range your chickens. In fact, we mention in Chapter 1 that pasturing poultry at the turn of the 20th century was the prevalent method of raising poultry.

Pastures are the exact opposite of a well-layered landscape, which has an abundance of garden structure. A pasture has very little structure in place. Generally speaking, a *pasture* is open land with possible low contour hills or undulating landscape. Pastures can have a few landscape elements such as an occasional shade tree, a row of trees for windbreak, and even living barrier hedges. Like a well-layered landscape, however, a pasture can provide chickens food for forage while they free-range in plant material, bugs, larvae, and worms.

Pastures can also be planted for chickens in corn, wheat, rye, oats, and barley. These types of grains can be harvested, threshed, and stored for chickens at a later time, or chickens can be allowed to pasture these crops.

Pastures can also be planted in cover crops for chickens such as alfalfa, clover, annual rye, kale, rape, mustard, and buckwheat. Once again, these cover crops can be cut and brought to chickens, or chickens can be allowed access to free-range them.

Many greens for chickens can be planted in pastures such as lettuces, dock (also called sorrel), cowpeas, mustards, clover, sorghum, chicory, and dandelions. We discuss many of these types of foods for chickens in more depth in Chapter 7.

Protection, shelter, and food are just as important in an open environment (like a pasture) as they are in a well-layered landscape. Here are some factors to consider:

- ✓ **Protection:** Protection is critical with perimeter fencing and temporary fencing if you're rotating your flock frequently. Rural open areas mean even more vulnerability to hungry predators. In Chapter 5, we discuss common fencing materials. In Chapter 10, we cover predators and specialty fencing for predators.
- ✓ **Shelter:** Pastures have less layering of trees and shrubs than gardens do. A shelter is necessary for providing protection from the sun, heat, rain, and other elements of weather. Chickens still need a quiet, sheltered place to lay their eggs and have access to a fresh water source. See Figure 4-4 for one way to shelter chickens in a pasture setting and see Figure 4-5 for a mobile chicken coop illustration.
- ✓ **Food:** Proper food in a pastured environment is important to consider. Chickens have different digestive systems than ruminants like cattle and sheep and therefore can't break down grass as easily. Grass alone provides little nutrition for chickens when compared to other food sources, although it is a great source of Omega-3s



Hens who eat a diet rich in Omega-3 fatty acids naturally transfer this goodness to their eggs. If you eat foods like Omega-3 rich eggs, it can promote overall good health and may be instrumental in preventing cardiovascular disease.

Chickens may appear to be eating grass, and they will eat some, but they're looking for seeds and insects, which are part of their natural diet. If you can plant a pasture with a mixture of some combination of the above listed grains, cover crops, and greens, for your chickens the better.



The height of a pasture is important. Chickens forage at a different height than other livestock. Chickens prefer foraging a pasture no higher than three to five inches. When plants are taller than five inches, carbon amounts in their leaves become higher and are also less digestible for chickens. Care must also be taken that pasturing chickens don't overforage a pasture below two inches, where a pasture can't regrow and replenish itself.



Chickens require a *daily* balanced diet to thrive and be productive. Provide a balanced year-round supply of feed to pasturing chickens if you're pasturing them on a low grass and weed mixture that's common in pastures. A good idea is to seed your pasture with cover crops that chickens like — such as white and New Zealand clover, oats, and rye — giving your chickens more food suitable for them to forage. You may want to research seeding your pastures for each season, planting a seasonal pasture for your chickens.

You can find sources for poultry pasture seed online. One is available from Peaceful Valley's website, www.groworganic.com. Look for their PVFS Omega-3 Chicken Forage Blend, available in sizes from 1 to 1,000 pounds. This blend is made up of a carefully selected blend of alfalfa, buckwheat, clover, flax, millet, rye, and rye grass.

Chapter 7

Growing Good Eats for Chickens and People

In This Chapter

- ▶ Growing vegetables with free-ranging chickens
 - ▶ Including a vegetable garden for you
 - ▶ An orchard and a berry patch are perfect for chickens free-ranging
 - ▶ Considering greens, grains, and seeds for chickens
-

Maybe it was having a vegetable garden that piqued your interest in chickens, or maybe it was raising chickens that prompted you to start a vegetable garden. The two go hand in hand and are a natural fit. In fact, you may be passionate about growing as much of your own food as possible. Growing your own food means having control over your food, picking it when it's at its ripest, using organic methods versus commercial methods, creating a sustainable garden, saving on fossil fuels, preserving wildlife habitat, saving on food costs, sharing your abundant harvest with others, and making less of an imprint on the planet.

A lot of edibles that you raise for yourself are also beneficial for chickens. Chickens earn their keep by helping you in the garden and on your properties throughout the year. It's up to you to carefully manage your chickens in your gardens to keep a rewarding balance.

In this chapter we focus on the many edible layers that can be grown in urban, suburban, and rural settings. In Chapter 1, we wrote about the importance of sustainability and self-sufficiency in growing more and more of our own food. Growing edibles is a large part of creating self-sufficiency for ourselves. Many of the edibles we grow for ourselves are also perfect edibles for our chickens. In this chapter, we recommend how to grow edibles not only for ourselves, but also for food for our chickens. We also recommend plants to grow for food, specifically for our chickens. The free-range methods discussed in Chapter 4 help us manage our edibles effectively for ourselves, and when we want to feed them to our chickens.

Practicing Good Sense in an Edible Garden

Edibles come in all shapes, sizes, colors, and flavors! These edible layers can be a major part of a layered landscape (see Chapter 6) and a key component in your chicken garden. This section covers some good practices to keep in mind when preparing an edible garden to coexist with chickens.



Edible landscaping, with co-mingling herbs and vegetables within ornamental gardens, is exploding in popularity today. Be very careful. If you're practicing this trend, always remember to use food-safe products and practices. Doing so is critically important with free-ranging chickens.

Thanks to visionary landscape designers articulating their garden designs, the edible landscape trend is continuing to escalate. People are now aware how beautiful edibles can be in a landscape. It touches people who have limited space to garden and would rather plant edibles that give them food and beauty, rather than solely ornamental landscape. Small is the new big, with small gardening spaces, container gardening, vertical gardening that takes advantage of tall narrow spaces, and many new small by spry dwarf plants coming available.

Edible landscaping is actually not a new concept. It has been around since the Romans incorporated beauty and function in their landscapes. The olive tree is the number one symbol of this concept providing serene beauty of the tree, and olives and olive oil for nourishment.

Preparing edibles for chickens

Not all edibles can be foraged by chickens; some need to be prepared and served up by their human caretakers. Make sure you know what edibles to feed to your chickens and how to prepare these edibles for your chickens.

Some edibles, such as pomegranates and passion fruit, have tough skins; crack and open them to the seeds before you give them to chickens. Round fruits — such as melons, cantaloupe, and apples — are simply better cut up for chickens to access and eat more easily. Chickens can better consume peeled root edibles, like carrots, rather than trying to eat them whole.



Some edibles have toxic or poisonous qualities to chickens. Although tomatoes are an edible fruit that chickens love, their leaves are toxic to them. Raw potato skins contain solanine and are poisonous to chickens. Rhubarb leaves are toxic to chickens. Avocado skins and pits are toxic to chickens. In Chapter 8, we further discuss and list poisonous plants for chickens.

Foraging for edibles

Chickens are very good at foraging and seeking their natural diet within their environment. Chickens will eat just about any edible that is available to them. Chickens have favorite foods, just like children. In time, you will come to know which foods these are.

On the flip side, chickens have an innate ability to sense what is good for them and what might be potentially toxic or poisonous. Chickens can live in gardens and environments that have plants with potential toxic qualities. Chickens usually will leave toxic plants alone, meaning not eating them. However, there is always the exception to the rule.

Chickens love tender succulent greens. You can choose to grow these in your vegetable garden for yourself, and hand feed them to your chickens, or plant them amongst your various chicken runs or zones for your chickens to graze on. Your lawn is an edible green, perfect for chickens, and rich in Omega-3 fatty acids. Make sure you are maintaining an organic lawn for your chickens and not using chemicals which could be harmful to your chickens. See Chapter 8 for more information.

You can plant all sorts of greens, mixing them with your ornamental plants in your garden, runs, or zones such as lettuces, New Zealand spinach, Swiss chard, and arugula. Swiss chard “Bright Lights” is a highly ornamental Swiss chard, and chickens like Swiss chard. Arugula is another favorite of chickens and self sows in the garden. We also list many more greens for chickens later in this chapter, under “Greens, Grains, and Seeds for Chickens.”



Low growing edibles such as those just mentioned, planted for your free-ranging chickens, should not be eaten for human consumption. Low growing edibles could come into contact with fresh chicken manure, which could make you potentially very ill.

Fan favorites

A short list of some of chickens' favorite edibles are arugula, blueberries, cantaloupe, corn on the cob, cranberries, grapes, kale, kiwi, lettuce,

passion fruit, pomegranates, sorrel, spinach, squash, strawberries, sunflower seeds, and Swiss chard.

Food for You: Tips for Growing Vegetables

Chickens aren't the only ones that deserve tasty homegrown food. You should benefit from a healthy garden as well. In this section we give points on how to grow a prosperous vegetable garden and how to keep it safe from chickens.

The vegetable garden

Growing vegetables, more than any other type of gardening means a daily presence, a constant attention to detail, and a keen awareness of the changing of seasons. Besides exercise and leading a life of moderation, eating seasonally from your own garden probably does more for your well-being and quality of life than anything else.

Here are some basic elements to consider when growing a vegetable garden:

- ✓ **Make your plan first on paper, what you are going to plant, where your vegetables will be planted in your garden plot, and when to expect harvest for each.** Read and follow seed packet directions or seedling instructions, for planting, spacing, and thinning.
- ✓ **Plant the vegetables that you and your family and friends like to eat the most.** If you're not interested in a certain type of vegetable, then don't grow it. Plant an assortment of heirloom tomatoes and squash each year. For fun, try to plant one or two new vegetables that you have never grown before. Don't be afraid to experiment with some of the exciting heirloom vegetable seeds available.
- ✓ **Pick a nice sunny, level, location away from trees and shrubs that might shade and compete for water and nutrients.** Make sure this location has a convenient water source. Starting out, don't make your garden too big. A 10' x 10' plot will feed a family easily, with lots of vegetables to share. Plant your tallest vegetables to the north, so they don't shade the shorter ones, and continue on down your plot with your shortest plants on your south side.
- ✓ **Surround your vegetable garden with a fence.** You need to keep out critters like "Peter Rabbit" and your chickens.
- ✓ **Work your soil first before planting.** Ideally, you want loose, rich, well-drained soil for a vegetable garden. Add to your soil, your finished humus blended with your chickens' manure, turn over well, and mix in. Level your ready-soil before planting.

- ✓ **Mark off your vegetable plot in “one foot segments” using two stakes tied with string the width of your desired vegetable plot, to provide a straight line for planting.** Some of your seeds might require rounded mounds, allow room for them. Adhere to the types of vegetables that are planted in the spring, summer, fall, and even winter.
- ✓ **Be sure to regularly weed and hoe.** This keeps your soil loose for water penetration and air. Weeds if left unchecked can rob nutrients from your growing vegetables. Water requirements vary according to your particular soil type and zone. Plants generally need 2 inches of water per week. Some plants have specific deep watering requirements, like tomatoes. If possible, water your vegetable garden in the morning.
- ✓ **Know when and how to harvest your vegetables for optimum flavor and yield.** This will help your vegetables retain their maximum vitamin content and flavor. Mark it on your calendar beforehand, the approximate time frame your specific vegetables should be harvested, and observe your vegetables closely approaching this time.

Potager: The European kitchen garden

Consider growing a potager, a more advanced, more refined vegetable garden. A *potager* is a centuries-old European concept of a year-round kitchen garden. It can be described as a four-season vegetable garden, large enough to feed and benefit a family with daily fresh vegetables, fruit, and flowers.

Choose your site wisely. A potager is a permanent year-round growing plot which is functional, as well as beautiful. As the months roll into years, you can spend a lot of rewarding time in your potager. Enhance your personal potager by where you locate it, what you grow, how you enclose it, how you adorn it, and how you manage it.

There are many wonderful elements which embody a potager such as enclosure, pathways, borders, structure, order, chaos, beauty, small trees, garden ornaments, the intertwining of function and beauty, and the romantic mixing of vegetables and flowers rotating through each season.

Here are some elements that define a potager:

- ✓ A potager is usually defined by some type of enclosure. Enclosure can be defined as walls, fences, thick hedges. Some of these enclosures can be a working surface for your potager, for espaliered fruit trees, support for tall plantings, and heat retention. Enclosure protects from competing wildlife, chickens, and weather forces such as wind.

- ✓ Pathways are important to divide your plots, create travel pathways, and working space to care for your potager. Pathways may be made of materials such as coarse mulch, gravel, bricks, cement, or even bare soil.
- ✓ Borders can be of a permanent design, for instance growing a low boxwood hedge, a “wood box” edge, or a stone border. Borders may also echo seasonal plantings such as a marigold border, or ornamental cabbage. Like borders will create a formal design in their repetition.
- ✓ Structure is important in a potager. Structure can be vertical in the shape of an arbor, small trees, a garden ornament. Structure is also walls, gates, and even terraces. Structure adds interest, and further defines the personal style of your potager.
- ✓ Order versus chaos. A potager can be orderly, organized with boxwood borders, and neatly confined rows of planting. It can also be orderly planted, and grow into chaos with a riot of romantic vegetables and flowers. A potager can be orderly or a chaos.
- ✓ Center a focal point in your potager such as a small tree, garden ornament, urn, or statuary. A focal point might also be an impressive artichoke plant, which renews itself year and year. More examples of possible focal points are a sundial, bird bath, obelisk, or a planted arbor. Zones below 8 need to start with new artichoke plants each year.
- ✓ Place a convenient tool shed or small building where you can keep all your tools, seeds, perhaps a potting shed, and your other potager resources at hand.
- ✓ Divide your potager into plots, or if you have raised beds, begin dedicating each plot or raised bed with specific seasonal vegetables you would like to grow. You can start your potager with any season. Whatever season you start with plant about 2/3 of your potager, and leave 1/3 free to be planted later. For example, create a 9' x 12' plot. Divide your plots into four rows of three plots each. Begin your potager by planting 9 of your plots, leave three of them empty. Another example, if you have 4 existing raised beds, plant 3 with seasonal vegetables, and leave 1 free to start planting when appropriate for the next season.

Eventually, your potager will slowly move into the next season, as your vegetables mature, are harvested, each plot is tilled, and replanted for the next season. Remember to keep a portion of your potager empty in anticipation of the next planting season. It will take a while to get the “ebb and flow” of it. Eventually, your potager will become fluid.

Everyone has their own timing with the four seasons and climate-specific vegetables, fruits, flowers, and herbs they can grow. Adapt your plantings to your own seasons, and your own preferences. Classic perennial favorite herbs for a potager include rosemary, thyme, oregano, marjoram, and

tarragon. Other classic plantings for a potager might include strawberries, melons, annual herbs, espaliered fruit trees, and of course the rainbow of seasonal vegetables.

Keeping your vegetables safe from chickens

The best way to have an abundant bountiful vegetable garden is to keep your chickens entirely out of it. Keep it enclosed, fenced off, and out of bounds. We don't encourage growing vegetables amongst free-ranging chicken, because of the remote possibility of sickness and disease such as salmonella. Low-height vegetables should be off limits to free-ranging chickens because 1) they will eat them all, and 2) if fresh chicken manure comes in contact with these vegetables, anyone who eats them could become violently ill.

Here are some points for keeping chickens out of your vegetable garden:

- ✓ Create an enclosure or zone surrounding your vegetable garden. Keep your chickens out of that zone during the entire growing season, until the garden is spent. Using a mobile tractor, place your chickens over your finished vegetable garden to clean it up, aerate it, eat any insects and bugs, and fertilize it with their manure. When your chickens are finished, move them out of the vegetable garden zone. If you have a potager, tractor your chickens on the plot that you'll next leave dormant, and then move your chickens to another zone.
- ✓ Grow vegetables, especially ornamental vegetables, interspersed with other plant layers throughout your chicken garden for design and for your chickens, but *not* for your consumption.
- ✓ Grow vegetables for human consumption in an entirely different part of your property, such as the front yard, where your chickens never free-range.

Highlighting Chicken-Friendly Edible Areas

Chickens really are versatile. They can flourish in a variety of climates and spaces. Check out the following sections to uncover a host of specialized edible areas that your chickens will love! These specific areas could be created into runs or zones for your free-ranging chickens, especially since there are certain times of year chickens would be beneficial foraging them.

Orchards

An *orchard* is defined as a piece of land intentionally planted with trees for food production. Orchards can have many sizes and varieties of trees, but generally they're fruit and nut trees.

Creating a free-ranging chicken run or zone works well in orchards. Chickens easily forage around the trees, and on fallen fruit in an orchard. Trees are considerably higher in height than chickens, so the fruit doesn't come into contact with the chickens, making it safe for humans to eat.

Putting your chickens to work

Chickens benefit an orchard by eating falling fruit, bugs, insects, maggots, and caterpillars, and by fertilizing the orchard at the same time. Chickens foraging in an orchard can eat and decrease orchard pests without the use of pesticides. Some common orchard pests are the apple maggot, codling moth, plum curculio, grubs, worms, larvae, and the European earwig. Different types of pests eat different areas of the fruit. Caterpillars gravitate to the apple core, while apple maggots feed on fruit flesh.



Allow chickens to free-range in your orchard in early spring before adult pests emerge and affect your fruit crop. Return them to the orchard after your crop starts ripening. Pest-ridden fruit usually drops first, leaving the unaffected fruit safe on the trees. Chickens clean up all the dropped fruit and effectively lower the insect pressure for the next year.

Planning your orchard

You can find fruit trees specific to your region and plant zones. Seek help through local nurseries, clubs that specialize in home orchards, rare fruit tree nurseries, and cooperative extension offices.

Fruit trees need plenty of sun and well-drained soil. Planting young fruit trees may mean an investment of three to five years before your first edible crop. Consistent pruning and care throughout the year is always key with these types of trees. As with other plants and trees, research requirements such as size at maturity, chill hours, and recommended pollinators for trees to flourish. What are chill hours and pollinators? Here's the scoop:

- ✓ *Chill hours* are a standard measurement of hours below 45 degrees Fahrenheit that many types of deciduous trees, shrubs, perennials, and bulbs require to flower well. Chill hours are an especially important measurement for fruit trees to bear fruit.

- ✓ **Pollinator** is a transfer of pollen from one part of a flower to another or from one plant to flowers of another for fertilization and seed production. Some fruit trees can be self-pollinators, while others require certain desirable varieties to act as pollinators.



Plant a chicken-friendly edible cover crop. The cover crop enhances your soil in the orchard and provides more food for your chickens. Remember not to let your chickens overgraze your orchard. Rotate them in and out of this zone throughout the year.



Although citrus orchards are common, don't hand feed your chickens any citrus. Chickens generally aren't interested in citrus trees or dropped citrus fruit on the ground. Here are some of the many different theories why chickens can't have citrus:

- ✓ Chickens are one of the few animals that can actually make their own vitamin C. Feeding them citrus would result in excessive vitamin C in their bodies.
- ✓ Citrus contains tannin, limonene, and other natural substances that are toxic to poultry.
- ✓ Eating citrus may interfere with chickens' calcium absorption, affecting eggshell quality.

Examples of fruit trees for a chicken garden

If you have orchards full of one of the following fruit trees, consider giving your free-range chickens some time there:

- ✓ **Apple:** *Malus spp.* Deciduous trees. Zones vary by species. Some species have showy fruit and flower buds. Many varieties are available.
- ✓ **Apricot:** *Prunus armeniaca.* Deciduous trees. Zones vary by species. Have showy fruit and flower buds.
- ✓ **Cherry:** *Prunus spp.* Deciduous trees. Zones vary by species. Have showy fruit and flower buds. Come in sweet and sour varieties.
- ✓ **Fig:** *Ficus carica.* Deciduous trees. Zones 7–11. Versatile tree for espaliered design, containers, and in the garden. Wonderful fruit and foliage.
- ✓ **Mulberry:** *Morus.* Deciduous trees. Zones vary by species. Fruit resembles small blackberries. Chickens love to eat the fruit.
- ✓ **Peach and nectarine:** *Prunus persica.* Deciduous trees. Zones vary by species. Beautiful stone fruit. The symbol of summer fruit.
- ✓ **Persimmon:** *Diospyros spp.* Deciduous trees. Zones vary by species. Beautiful foliage for the garden. Fuyu Persimmon orange-colored fruit is firm and shaped like a flat tomato.

- ✓ **Plum:** *Prunus spp.* Deciduous trees. Zones vary by species. Beautiful stone fruit. Many varieties are available.
- ✓ **Pomegranate:** *Punica granatum.* Deciduous shrubs or trees. Zones 7–10. Beautiful ornamental fruit. Fruit can be messy when opened. Chickens love to eat the seeds.

Space-saving fruit trees

Trees suitable for orchards can provide quality food for you and your chickens. Not everyone has space for an orchard, especially if you live in an urban or suburban area. Trends today indicate that people have smaller spaces to garden in, converging with more desire to grow their own food. It is the age-old adage, “less is more.”

Here are five space-saving fruit tree techniques to help maximize growing your own desired fruit, perhaps as a mini-orchard:

- ✓ **Try the practice of espalier.** To espalier fruit trees, place them on a two-dimensional plane in a pattern on a supporting wall, side of building, or fences. South and west facing directions are best for espaliered fruit trees. Espaliered fruit trees create a design with living landscape. You can espalier trees yourself or buy them already pattern-established from a nursery or online. Most fruit trees can be espaliered.
- ✓ **Check out multi-variety fruit trees.** Available from your favorite nursery, these fruit trees are already grafted and established with different varieties on one tree. An example is a pear tree that has Comice pear, d’Anjou pear, and Red Bartlett pear harmoniously growing together on one tree. You have one tree with multiple varieties. Take care to observe and prune your tree carefully, because sometimes one variety grows better and dominates the tree.
- ✓ **Attempt high-density planting of fruit trees.** Plant similar or dissimilar varieties of fruit trees closely together. For instance, plant four fruit trees 15” apart in a square shape, in an area that’s ten-by-ten feet. It requires summer pruning, but gives you the advantage of a long and varied fruit season, easy cross-pollination, natural restriction of fruit tree size, and a great appearance. With high-density planting, you can create free-form shapes, such as gazebos, circles, or as a hedge in a straight line.
- ✓ **Limit your fruit tree size.** After purchasing your bare root tree and planting it in your chosen location, cut off the top third of your tree at a 45-degree angle above a bud. Further trim any side branches or shoots to six inches to encourage new growth. Limiting your fruit tree size when you plant it keeps your fruit tree small and manageable for maintenance and harvest.

- ✓ **Plant fruit trees in containers.** Fruit trees in containers are beautiful, space-saving, and practical for small areas. Use on patios, entrances, courtyards, and focal points in the chicken garden. Research which fruit trees do best in containers for your plant zone. Fig trees are an excellent choice for containers in plant zones with Mediterranean climates.



Fruit trees are not the only edibles that do well in containers, blueberry bushes, determinate (bush) tomato plants, many herbs, and many types of lettuces and greens can be successfully grown in containers. You might have to use a chicken-resistant tool such as an upside down basket or chicken wire to keep your chickens out of these planters when these edibles are planted through the time they are ripe.

Perhaps one or more of these space saving techniques will work in your space, and give you the ability to grow more fruit trees or edibles.

The berry patch

Nothing tastes like fresh blackberries, blueberries, raspberries, and strawberries out of the garden. Hopefully, you have a spot in your chicken garden to grow some of these delectable berries. Berries can come in many forms and can be integrated throughout your chicken garden. **Warning:** Your chickens love these berries as much as your family and friends do. You may have to net, temporarily fence, or change chicken runs or zones when the berries are ripe!

Planning your berry patch

Berries are a good shrub to have in a chicken garden, because they are great food for chickens, these shrubs often provide shelter and protection with their thorny canes and can be grown as barrier hedges. Many types of berries grow in an upright form and can be trained over arbors, fences, and trellises. Most berries take full sun, but some varieties will take part shade.

Chickens can free-range amongst the berry patch for most of the year. When it is ripe berry season, you can choose to net your berry shrubs from your chickens, or graze them in another run or zone. Chickens if allowed to, will eat berries they can reach, and berries that have fallen on the ground.

Strawberries, are low to the ground and are best protected within your fenced vegetable garden, and not given access to your chickens. Alpine strawberries, also low to the ground, used as ground cover should be left for your chickens only, avoiding fresh manure exposure, and potential illness.

Examples of berries in the chicken garden

Here is a short list of berries to consider growing in your garden for yourself, and your chickens:

- ✓ **Alpine strawberry:** *Fragaria spp.* Perennial plants. Zones 4–11. Surprising ground cover for difficult-to-maintain areas. Prefer morning sun or partial shade. Doesn't tolerate being walked on. Can be used in potted containers.
- ✓ **Blueberries:** *Vaccinium spp.* Deciduous shrubs. Zones 3–10, vary by species. A wonderful addition to any garden. Blueberry fruit is high in antioxidants. Some varieties are four-season interest. They like full sun. Depending on variety, can be used in many forms such as a shrub border, hedge, screen, groundcover, and in a container. Like to be kept moist and in acidic soil.
- ✓ **Brambleberry (blackberry and raspberry):** *Rubus spp.* Deciduous bushy or tall vining plants. Blackberry: Zones 5–9. Raspberry: Zones 3–10. They like full sun. Canes are biennial, which means they have a two-year life. Fruit is delightful and can be used fresh from the garden in many ways. They can be considered a barrier hedge, because stems can be prickly. The trailing types can be trained over structures.
- ✓ **Cranberry and lingonberry:** *Vaccinium spp.* Cranberry: Evergreen shrubs or vines. Zones 3–7. Lingonberry: Evergreen shrubs. Zones 2–7. Both need full sun. Plants require a lot of moisture. Cranberries are harvested in fall, and lingonberries in mid-summer to fall. Both of these plants make wonderful ornamental groundcovers. Ideal garden conditions for these shrubs are cool climate, with moist acidic well-drained soil. Chickens love berries from these plants. See www.cranberrycreations.com, for more information on cranberries, and purchasing plants.
- ✓ **Currant (gooseberry):** *Ribes spp.* Deciduous shrubs. Zones 3–8. They like sun. Nice size shrub between three and six feet tall. Most currant shrubs are thornless. Gooseberries are thorny and can be used as an informal barrier hedge. They can also be groomed upright as focal plant or sprawled over a structure. Harvesting can be time consuming, so why not let your chickens enjoy them?
- ✓ **Strawberry:** *Fragaria spp.* Perennial plants. Zones 4–11. Many varieties available. Full sun. Appreciate mulching with straw to keep berries off soil. Choose day-neutral varieties that peak in early summer, and continue to produce fruit into the fall. Strawberry plants need to be replenished every three years. Plant in rows or a container like a strawberry pot. Best to plant these strawberries within the enclosure of a vegetable garden, or fenced off from your chickens.

Herbs

Herbs have a whole history unto themselves. Herbs have been carried in ships by early explorers, by wind and birds, and in the pockets of immigrants seeking a new country and life. In all their travels, herbs transport the culture from where their journey began. Herbs have always had many uses for man and other living creatures. In Chapter 6, we mention many medicinal herbs and their role in benefiting chickens' general health and laying, repelling pests, and even de-worming. In this section, we focus on herbs as edibles for culinary use, as well as the benefits of growing them in a chicken garden for chickens.

Planning your herb garden

Herbs can be planted intermingled throughout your chicken garden, and close to the chicken coop. Many herbs are multifunctional in the chicken garden, providing ornamental beauty, fragrance, health benefits to your chickens, and insect-repellent qualities.



Herbs are fascinating plants that deserve a spot in everyone's garden. The best location for culinary herbs is a sunny spot immediately off your kitchen door for convenience. Plant herbs in the ground or in containers. Protect these herbs from your chickens, like you do with your vegetables for health reasons, and because many of them are delicate annuals. If you need a larger quantity of herbs, you can plant additional herbs in your fenced vegetable garden — again, away from your chickens.

The ten most popular herbs for people are basil, curly and Italian parsley, sage, chives, mint, Greek oregano, rosemary, French tarragon, dill, and cilantro.

Examples of herbs in the chicken garden

Try planting the following herbs in your chicken garden, for all of their benefits for chickens:

- ✓ **Catmint:** *Nepeta cataria*. Perennial. Hardy to Zone 3. Full sun. Known for attracting bees and cats. A good insect repellent for lice and ticks on chickens. Catmint can be stunning as a mass border in a garden with its blue flowers.
- ✓ **Comfrey:** *Symphytum officinale*. Perennial. Hardy to Zone 5. Rich in protein, potassium, and calcium. Beneficial to chickens for their general health and laying, but their leaves can be harmful to humans if ingested. Comfrey is a dynamic accumulator. It can become invasive in the garden.

- ✓ **Fennel:** *Foeniculum vulgare*. Annual. Zones 6–9. A striking plant (especially the bronze variety) up to six feet tall. Lacy pods of yellow flowers can attract butterfly larvae and beneficial insects. Full sun. Their foliage and seeds are good for chickens to eat for general health.
- ✓ **Feverfew:** *Tanacetum parthenium*. Perennial. Zones vary by species. Easily reseeds itself in the garden. Feverfew is an excellent insect repellent if you dry its small daisy-like flowers.
- ✓ **Lavender:** *Lavandula species*. Zones vary by species. Evergreen shrubs. Full sun. One of the most popular and well-loved herbs. It's very attractive to bees. Lavender is a good insecticidal herb. Plant a row of lavender around your chicken coop. Put dried lavender in your chicken coop for an enhancing fragrance, and to calm chickens.
- ✓ **Nasturtium:** *Nasturtium majus*. Annual and perennial. Zones vary by species. Full sun. A great general herb for chicken health. Extremely attractive with vibrant edible flowers. It has antiseptic and antibiotic properties. Its seeds can be used as a natural chicken de-wormer. It also has insect repellent qualities. It reseeds itself.
- ✓ **Rosemary:** *Rosmarinus officinalis*. Perennial. Evergreen shrubs. Zones 6–10. Full sun. It has showy flowers that come in blue, pink, and lavender, depending on the variety. Many different varieties in different forms. Use as a small hedge for groundcover. Its aromatic scent repels insects.
- ✓ **Sage:** *Salvia spp.* Perennial evergreen herbs in Zones 9–10, and annuals in colder zones. Full sun. Many different varieties, and quite striking in a garden setting. Sage is a good herb for chickens' general health.
- ✓ **Wormwood or mugwort:** *Artemisia absinthium*. Perennial. Hardy to Zone 4. Beneficial as an insect repellent for chickens, prepared as a steeped tea mixture. Grow next to your chicken coop to help control external parasites.

Greens, Grains, and Seeds for Chickens

Greens, grains, and seeds are other important edibles that you can grow for yourself, and for chickens. Many grains you can grow are the same grains found in a chicken laying feed. Chickens' beaks are built to eat seeds. Consider growing a variety of seed-producing plants. If you can't readily find some of these plants and seeds, you can find them for sale on the Internet.

Greens for chickens

Pacing chickens eating greens is hard to do. Chickens love tender succulent greens. You can choose to grow these in your vegetable garden for yourself, and hand feed them to your chickens, or plant them amongst your various chicken runs or zones for your chickens only to graze on. What is key here, is to let greens grow to maturity, before letting your chickens graze on them. If you have pasture or large zones, try planting them in greens. Chicory, for instance, is a green suitable for pasture planting.

Here are some great choices for growing greens in your own garden and then hand-feeding to your chickens: Arugula, beet tops and leaves, Brussels sprouts, carrot tops, chicory, collard greens, endive, kale, kohlrabi, lettuce (all types), mache (corn salad), mizuna, mustard, New Zealand spinach, radicchio, sorrel, spinach, Swiss chard, turnip greens, and wheat grass.



Hand feeding these greens to your chickens is a way of pacing your chickens. If chickens have access to greens, they will most likely eat them all at once. You want to allow the plants to grow to maturity, as some like arugula will self sow. Growing greens in your vegetable garden, allows you to harvest greens for yourself whenever you like, and hand feed them to your chickens in moderate amounts.

- | | |
|-------------------------------|-----------------------|
| ✓ Arugula | ✓ Mache (corn salad) |
| ✓ Beet tops and leaves | ✓ Mizuna |
| ✓ Brussels sprouts | ✓ Mustard |
| ✓ Carrot tops and leaves | ✓ New Zealand spinach |
| ✓ Cauliflower tops and leaves | ✓ Radicchio |
| ✓ Chicory | ✓ Sorrel |
| ✓ Collard greens | ✓ Spinach |
| ✓ Endive | ✓ Swiss chard |
| ✓ Kale | ✓ Turnip greens |
| ✓ Kohlrabi | ✓ Wheat grass |
| ✓ Lettuce (all types) | |

Some greens can be grown in your chicken garden where your chickens are free to roam. These greens are actually weeds and are great foraging plants that chickens count among their favorites.



Although these greens are considered weeds, some are edibles for humans. Properly identify these types of greens before eating them for human consumption.

- ✓ **Chickweed:** *Stellaria media*. Common cool-season annual. A favorite forage plant of chickens that's also a good tonic plant for their general health.
- ✓ **Dandelions:** *Taraxacum officinale*. Common weed. A good forage plant for chickens and a plant that people also eat. It can be found in mixed pasture grasses. Its leaves can be used in salads.
- ✓ **Lambsquarters:** *Chenopodium album*. Cool-season annual. Also called giant goosefoot. Another good forage plant for chickens that's also an edible plant for humans. Similar in taste to spinach, with a little more mineral taste.
- ✓ **Plantain:** *Plantago spp.* Perennial herb and common weed. A good forage plant for chickens. Although it shares the same name, it's dissimilar to the type of banana. It can be found in mixed pasture grasses.
- ✓ **Purslane:** *Portulaca oleracea*. Warm-season annual and common weed. Also called pigweed. It is high in Omega-3 fatty acids for eggs. A good forage plant for chickens. It's an edible plant for humans, and is eaten as a leaf vegetable.

Grains for chickens

You may want to grow grains for your chickens and yourself as a food source. Grains need space, a pasture, or an available fallow chicken zone. Grains need time to reach maturity before harvesting, threshing, and storing them. Another option is to let chickens free-range after the grain has reached maturity. Grains vary with growing requirements and harvest needs. Grain stalks and plant parts can also be used for chicken bedding, composting, and mulch.



If you are planning on growing grains and harvesting them for your consumption. Harvest your grains first, and then graze your chickens after.

This also goes for the seed-producing plants we list in the next section. Harvest for yourself first, and then free-range your chickens.

Grains aren't always the most sustainable crops, and can take a lot of nitrogen out of the soil. Consider growing grain crops alternately with legumes and cover crops like alfalfa, annual rye, birdsfoot broadleaf trefoil, buckwheat, clovers, kale, and mustard to replenish nutrients.

- ✓ **Barley:** *Hordeum vulgare*. Cool-season, full-sun annual. This grain can be used as a cover crop, too. Chickens can eat barley whole without processing. Barley, in a culinary use, can be used in soups and as a pilaf.
- ✓ **Corn:** *Zea mays*. Warm-season, full-sun annual. Easy to grow, but requires a lot of water, and can be prone to pests in a home garden. Fresh summer corn is a treat for you and your chickens.
- ✓ **Oats:** *Avena nuda*. Cool-season, full-sun annual. The hull-less variety is easier for threshing. Soak oats in water to soften them before giving to chickens. Chickens also enjoy warm oatmeal on cool mornings.
- ✓ **Rye:** *Secale cereale*. Cool-season, full-sun annual. A hardy plant that tolerates poor soil and thrives in pastures. Chickens like free-ranging in rye. Rye berries, as a culinary grain, can be ground for flour and baking uses or boiled to soften and add to cereals and salads.
- ✓ **Wheat:** *Triticum spp.* Full-sun annual. Easy to grow, but harvesting is time-consuming. Wheat is a good forage crop for chickens. Wheat spring blooms attract beneficial insects. Wheat grass is young wheat plants that can be grown for chickens in garden flats, if space is a problem. Wheat grass is popular juiced. Wheat berries are nutritious, and as a culinary grain can be ground for flour, or cooked whole like rye.

Seeds for chickens

Seeds are another type of food chickens enjoy and forage for. Their beaks are perfectly designed for picking up seeds. Seeds are part of a chicken's natural diet. Seed-producing plants are a good choice to grow in rotating chicken runs or zones. Here are some good choices:



- ✓ **Flax:** *Linum usitatissimum*. Cool-season, full-sun annual. Plant in springtime. It has seeds that are very nutritious and high in Omega-3 fatty acids. Flax can be grown similar to a grain.

Although flax is highly nutritious for chickens, avoid giving your hens excessive amounts of flax seed. If they eat too much, it creates a strong flavor in their eggs.

- ✓ **Millet:** *Panicum miliaceum*. Warm-season, full-sun annual. Plant in springtime. Millet is another plant that requires a lot of nitrogen. Chickens can eat their seeds, and other parts of the plant. There are many types of millet, including a culinary millet that you can use in cereals and pastries.

- ✓ **Sesame:** *Sesamum indicum*. Warm-season, full-sun annual. Sesame requires a long growing season and has nutritious seeds and striking foliage. Thomas Jefferson was smitten with sesame and grew it until he was 81. Chickens enjoy these seeds. You can add these seeds to vegetables and rice dishes.
- ✓ **Sorghum:** *Sorghum bicolor*. Warm-season, full-sun annual. Sorghum produces a sweet cereal crop that's known for its seed. Sorghum is a seed that chickens can easily eat. You can make sorghum into a syrup, or grind it and use it as a sweetener for gluten-free baking.
- ✓ **Sunflowers:** *Helianthus annuus*. Warm-season, full-sun annual. Sunflower heads can be dried and given to chickens directly. Sunflowers are bright and cheery wherever they're planted. You can toast sunflowers and eat them as snacks and in salads. See the color photo insert of sunflowers.

Chapter 8

From Lawns to Poisonous Plants: Other Landscape Considerations

In This Chapter

- ▶ Considering chickens and your lawn
 - ▶ Identifying plants that are resilient to chickens
 - ▶ Some poisonous plants deadly to chickens
-

Landscape ideas and possibilities cover a wide-range of areas. In this chapter, we discuss three important factors when planning your yard for free-range chickens: lawns, chicken-restricted areas, and poisonous plants.

First, your properties may include lawns in addition to flowerbeds, vegetable gardens, and social areas. Chickens can help “mow” the lawn and maneuver around difficult spots that a lawnmower sometimes can’t. We cover lawn maintenance, alternatives to lawns, and putting your chickens to work. Next, we cover gently discouraging chickens from free-ranging in specific areas of your garden — think newly planted softscape, for example. We tell you about plants that can deter chickens, as well as chicken-resistant methods such as cloches and wire baskets.

Finally, we talk about the important topic of poisonous plants. Many garden plants have a toxic or poisonous quality that can be potentially dangerous to chickens. It helps to be knowledgeable about these plants for the well-being of your flock.

The Lawn: To Be or Not to Be

Lawns are a big deal. If the U.S. had just one big house, there are estimates that its lawn would cover an area of 39,000 to 49,000 square miles, making it the largest irrigated crop — even larger than U.S. food crops.

Lawns are an expansive green carpet that can be social areas, play areas, activity areas, or simply serene areas. Lawns are a reprieve from asphalt and concrete materials, have a cooling effect, and offer oxygen exchange to its surroundings.

On the flip side, lawns are costly to maintain and require a great deal of water, fertilizers, weed killers, maintenance, labor, and fossil fuels to run lawn equipment. Traditional lawns aren't a sustainable element for the garden, nor are they helpful in the beneficial layering aspect.

So, to have a lawn or not? We believe in following the current trend of decreasing the amount of lawn space and replacing it with more efficient softscape elements. But we also realize that lawns are an important factor in many spaces, and with proper care they can be a functional element in the yard.

Lawn safety that's good for chickens

Chickens and lawns are a good mix, only if your lawn is organically maintained and your chickens are well-managed with it. By organically maintained, we mean your lawn is not chemically fertilized and chemical weed killers or pesticides are not used. There are no leaky spots of oil or gasoline around either. Traditional lawns need regular water, and your chickens should not be allowed to free-range on a lawn still wet from irrigation.



The Silkie chicken breed can get wet and cold easily from the very nature of their fluffy silk plumage, which can't deflect moisture as well as feathers of other chicken breeds.

Due to risk of illness, it is never a good idea to free-range chickens in damp areas and expose their feet to wet prolonged periods of time such as a wet lawn.

Chickens are beneficial to an organic lawn by mowing it with their grazing ability, eating any insects and worms in the lawn, and leaving their manure as a precious fertilizer.

There has to be a balance between the size of your lawn and the size of your chicken flock. Too many chickens grazing on a lawn can create over-grazing bare spots, and dipping below a healthy grass level of 2 inches, for grass to grow and replenish itself. Chickens can free-range randomly over a lawn, or you can incorporate the mobile chicken tractor method with targeted grazing areas.

If a lawn is too big, and simply not practical for your flock of chickens to graze and keep it ascetically appealing, an alternative is to mow your lawn, and put your grass clippings in your compost pile. See Chapter 1, for more information on the value of composting.

Chickens prefer a grazing height of 3" to 5", which means keeping your lawn height adjusted a little higher than normal. Consider using an environmental-friendly grass that requires less watering, grows longer, needs less mowing, and can take shade.

Choosing alternatives to a standard lawn

Following the trend toward reducing lawn space to create a more eco-friendly garden area may be the right choice for you. Luckily, there are many different paths you can choose as alternatives to a lawn. Take a look at some of the following choices:

- ✔ **Plant an environmentally friendly lawn that requires less water, fewer fertilizers, and less maintenance.** Some grasses are more environmentally friendly than standard lawn seed. Wildflower Farm, www.wildflowerfarm.com, sells an Eco-Lawn seed. This grass seed creates a finer grass with longer, deeper roots that requires less water, can be mowed or not mowed, needs little fertilizing, grows in sun and part shade, under pines, and in many types of soils.
- ✔ **Substitute ornamental grasses and sedges that create a natural looking lawn.** Most of these grasses don't need any mowing. They're low maintenance and usually drought tolerant. Ornamental grasses come in many sizes from 2 inches in height to several feet. They also come in different colors to match your garden color palette and style. Although sedges aren't true grasses, in the genus of *Carex*, they're often grouped with ornamental grasses for their same appearance and uses. Most of these grasses are not meant for heavy traffic areas, but some can be walk-on lawn substitutes. California meadow sedge, discussed in the next list, can be walked on.
- ✔ **Reduce your lawn to a smaller size.** Substitute pea gravel and decomposed granite for some of your lawn areas. You can play popular games, such as bocce ball, on level decomposed granite (DG) areas.
- ✔ **Consider using decorative ground cover, which is pleasing to the eye, low maintenance, very durable, and sometimes edible.** Examples of edible ground covers are alpine strawberry, mint (creeping types), rosemary (trailing types), and thyme (trailing types).
- ✔ **Introduce other pleasing garden features.** Add items such as rock gardens, statuary, or a water feature as a substitute to the lawn.

Here are some suggestions of plants that do well as an alternative to a lawn:

- ✓ **Berkley sedge or European meadow sedge:** *Carex divulsa*. Zones 5–9. Very hardy, versatile sedge for many growing conditions, up to two feet high by two feet wide.
- ✓ **California meadow sedge:** *Carex pansa*. Zones 8–11. Grown for its green foliage, up to one foot high by one foot wide.
- ✓ **Moroccan Fescue:** *Festuca mairei*. Zone 5–9. It is a stunning cool season ornamental which has a clumping form up to 36 inches high by 36 inches wide. In mass, it creates a beautiful drought tolerant meadow effect.
- ✓ **Muhly grass:** *Muhlenbergia capillaris*. Hardy to Zone 6. Full sun to part shade. Stunning in mass plantings. It blooms in the fall, with a striking pink willow tips.
- ✓ **St. Augustine grass:** *Stenotaphrum secundatum*. Zones 8–10. A perennial grass for warm climates. Grown not by seed but as sod or runners. Creates a grass that's a thick thatch. *Variegatum* variety is extremely striking with green leaves and creamy strike.

Getting Your Chickens to Do the Dirty Work

Put your chickens to work! Whether you choose to keep a lawn or remove a lawn, your chickens can actually help. Now, that's a good way to have them earn their keep!

Mowing a lawn with chickens

Use your chickens to mow your lawn, only if you maintain an organic lawn, free of chemicals and pesticides.

Move chickens around your lawn with a mobile chicken tractor (see Chapter 4). Chickens like to forage at three to five inches in height. Letting your grass grow to this height ensures they have grass to forage, and chickens are less likely to make a deep imprint on your grass. Chickens eat grass, bugs, and worms while fertilizing your lawn at the same time. Chicken manure ages and breaks down into your grass over time.

When using a mobile tractor with your chickens, be careful to move your mobile tractor frequently so that your chickens eat your grass, but don't

graze it below a healthy two-inch height. Timing to move a chicken tractor to a different grazing grass spot is dependent on how many chickens you have in the mobile chicken tractor, and the health and height of your grass.



A point to consider is that chickens free-ranging on a lawn are not as well protected as when they're amongst the many layers of a garden.

Taking away the lawn with chickens

Suppose you decide to get rid of your lawn, and try one of our alternative suggestions. Chickens will gladly help you do away with the lawn. Use the same principle as mowing a lawn with chickens. Use a mobile tractor with your chickens in each spot longer than you would for mowing, letting your chickens forage and scratch grass until the grass becomes soil. Add compost after most of the grass is gone, and let your chickens fertilize this area with their manure, and mix compost into the soil. Keep rotating your mobile tractor with your chickens until your entire lawn area is aerated loose soil.



This process could take hours to days, depending on how large or small your lawn is. Monitor your chickens on a regular basis, and move your chicken tractor to another spot when one area is finished. Remember to provide food and water to your chickens for any extended time of two hours or more, and return them to their coop at night if your mobile chicken tractor is not permanent housing for them.

If you don't have a chicken tractor, erect temporary fencing in your designated lawn area and follow the same procedure. Make sure you provide food, water, and shelter to your chickens when you're removing a lawn over a long period. Chickens can be vulnerable in an open lawn to sun and predators. Tackle this project while you're close by the house or in the garden.

Restricting Chickens from Certain Spaces

Sometimes you'll want to restrict your chickens from accessing parts of your garden and property. Especially vulnerable are young fragile plantings with shallow roots, and flowerbeds recently mulched. Chickens are drawn to those like bees to honey.



The key to free-ranging chickens is properly managing them. Chickens can't distinguish between what you want them to eat and what you don't want them to eat. They also can't distinguish between what areas you want them to be in and what areas you don't want them to be in. You have to guide and manage them.

Using plants to ward off chickens

Some plants deter chickens from entering certain areas. Chicken-resilient plants come in many forms, as in specific trees, shrubs, perennials, herbs, and ground covers. It helps if they are woody, with deep roots. Many plants that are dense such as mass plantings and groundcovers can also be effective in deterring chickens.



A young form of any tree, shrub, perennial must be protected from chickens until it has time to mature. A plant that is considered to be chicken-resistant needs time to grow and mature before exposing it to a flock of chickens.

Here are plant examples that are considered to be chicken-resistant (this is not an inclusive list, in Chapter 6, we discuss and list many types of plants for the chicken garden for specific purposes):

- ✓ **Trees:** Most trees are chicken-resistant. An exception might be if an outside pen was constructed around an existing tree, and a large flock of chickens was continuously burrowing under it, roosting, and heavily fertilizing it.
- ✓ **Shrubs:** Most popular with chickens for shelter, protection, and relaxing. Can vary in sizes. Salvias are woody perennials that stand up to chickens. Some popular varieties are Cleveland Sage, *Salvia Clevelandii*, and Mexican Sage, *Sage mexicana*.

Here are some more examples to consider:

- **Barberry:** *Berberis spp.*
- **Breath of Heaven:** *Coleonema spp.*
- **California Wild Lilac:** *Ceanothus spp.*
- **Camellia:** *Camellia spp.*
- **Euonymus:** *Euonymus microphyllus*
- **Ferns:** *Polystichum spp.*
- **Lavender:** *Lavendula spp.*
- **Lilac:** *Syringa spp.*
- **Pittosporum:** *Pittosporum spp.*
- **Plumbago:** *Plumbago spp.*
- **Rose:** *Rosa spp.*
- **Rosemary:** *Rosemarinus officinalis spp.*

- **Spiraea:** *Spiraea spp.*
- **Sage:** *Salvia spp.*
- **Viburnum:** *Viburnum spp.*

✓ **Perennials:** Plants that are “work horses” in the garden. Landscape geraniums, *Pelargonium spp.*, can cover large flowerbeds and parts of the garden with chickens scratching around them.

Check out these varieties:

- **Black-Eyed Susan:** *Rudbeckia spp.*
- **Calla Lily:** *Zantedeschia spp.*
- **Catmint:** *Nepeta spp.*
- **Daylily:** *Hemerocallis spp.*
- **Hosta:** *Hosta spp.*
- **Iris:** *Iris spp.*
- **Lily of the Nile:** *Agapanthus spp.*
- **Peony:** *Paeonia spp.*
- **Shasta Daisy:** *Chrysanthemum maximum*
- **Yarrow:** *Achillea spp.*

✓ **Groundcover:** Tap into the beauty and function of ground covers. Ground covers are usually dense, aesthetic, aromatic, functional, and some are edible. The density keeps chickens away from them. They have trouble scratching through the soil.

Here are some examples:

- **Blueberry (low bush):** *Vaccinium angustifolium*, Brunswick, Burgundy, and Top Hat varieties
- **Feverfew:** *Tanacetum parthenium*.
- **Juniper (low varieties):** *Juniperous*.
- **Mint (creeping types):** *Mentha spp.* It can be invasive in a garden.
- **Rosemary (trailing types):** *Rosmarinus officinalis*
- **Roses (ground covers):** *Rosa spp.*
- **Sweet Woodruff:** *Galium odoratum*. It can be invasive in a garden.
- **Thyme (creeping varieties):** *Thymus spp.*

- ✓ **Annuals:** Annuals have a short season, yet mature into a splash. Chickens benefit by eating these in the chicken garden.

Here are two types to check out:

- **Borage**, *Borago officinalis*. Every chicken garden should have this annual growing in it. It easily reseeds, but does not transplant well because of a large taproot.
- **Nasturtium (trailing variety)**, *Tropaeolum majus*. Another indispensable annual in a chicken garden. Reseeds easily.

Considering chicken-resistant tools

You can persuade chickens to stay away from a plant or a specific area without too much effort — as long as they haven't already encountered it. If, however, chickens find their way to an area you don't want them in, it's harder to dissuade them from that area. Try to implement chicken-resistant methods before chickens invade a sensitive plant area, such as a vegetable garden.



In Chapter 5, we discuss fencing variations further. There is a difference between fencing that keeps predators away from chickens, and fencing that keeps chickens away from parts of the chicken garden. Predator fencing is much stronger in order to withstand the strength and force of a predator.

Use your imagination in finding chicken-resistant possibilities. Look for items that can fit in with your garden style. Don't use anything that previously held pesticides or chemicals, or that's sharp and pointed, regardless of how cute it is. You don't want to expose your chickens to anything that can harm them.

Barrier fencing

Use inexpensive lightweight fencing materials to fence off areas from your chickens. Materials that work well are chicken wire, plastic fencing, rabbit fencing, and construction cloth fencing. Reinforce these areas with intervals of support.

Barrier materials

Use materials that you may have on hand in your garden, such as stones, concrete chunks, and bricks, to make a circular barrier around plants or trees that you want to protect. Barrier methods inhibit chickens from reaching the bases of plants and trees.

Cloches

Cloches are bell-shaped domed covers, usually made of glass. Glass cloches, new or vintage, are a smaller option for protecting plants. They're good for protecting plants that have re-seeded or that have delicate new growth emerging.

Custom wire screens

Perhaps you have half-inch wire hardware cloth leftover from building your chicken coop and outside pen. Why not make custom-sized screens for your flowerbeds or borders? Custom screens are simple to make after you've taken the measurements you need. Bend and mold your hardware cloth to match your desired height off of the ground and an overall perimeter dimensions. You can even make a handle out of wire, or use a wood handle secured to the body of your screen, for easier handling. Store them away when you don't need them for the garden.

Flea market finds

You can find chicken-resistant tools to use in the chicken garden at garage sales and flea markets. You can re-purpose many items into chicken-resistant tools. Look for oversized wire baskets that can be placed upside down over a newly planted shrub or prized perennial. Wood-slatted fruit boxes work well when turned upside down, allowing air circulation, and filtered sun over plants. Bottomless animal or bird cages may be an option to use in your garden.



Be sure to thoroughly clean and examine your new finds before placing them in your garden. Some old items may contain hazardous materials, such as lead paints or exposed nails. Be sure to rid these items of those materials to keep your chickens safe.

Mobile chicken tractor

One of your best chicken-resistant tools can be a mobile chicken tractor. When you've done a lot of work in the garden, and you don't want your chickens to interrupt your progress, contain them in a mobile chicken tractor. This tool gives you versatility in confine-ranging your chickens, while keeping them away from your work in the garden.

Motion-sensor water sprinklers

A battery-operated motion-sensor water sprinkler can be installed in your chicken garden. When it detects motion, the water sprinkler starts watering a designated area. Chickens don't like to get wet and quickly move out of the

area. Look for these sprinklers at <http://www.contech-inc.com/products/home-and-garden-products/animal-repellents/scarecrow-motion-activated-animal-deterrent>, and other and other websites such as Amazon.

Not only will your chickens get the message, but so will other animals — such as hungry deer, your neighbor's uninvited cats and dogs, and potential predators.

This tool gives you a safe and humane method of discouraging animals and chickens from your chicken garden. The downside of this motion-sensor water sprinkler is that you have to remember to avoid it or turn it off when you're in your own garden. And although it is a discouraging tactic, it isn't 100 percent foolproof!

Netting

At farm and agricultural supply stores, you can purchase netting. Netting is generally used to prevent wildlife from eating prized edible areas, such as your berry patch, orchard, or vineyard. It discourages chickens, too. The netting is small enough that chickens have a hard time getting their beaks through it and reaching the fruit. This netting can be rolled up and stored, and used year after year.

Knowing Which Plants Are Poisonous to Chickens

When you're free-ranging chickens, acquaint yourself with the more common ornamentals and edibles that are mildly toxic to poisonous to chickens.

You'll find a variety of plants that have toxic or poisonous qualities for chickens. Always err on the side of caution; if you suspect a plant is poisonous to your chickens, rid it from your garden. Many plants have toxic properties that act as a type of innate defense to help the plants to survive.



You know your chickens and your chicken garden best. Although some plants are considered poisonous or mildly toxic, chickens generally free-range amongst these plants, leaving them alone. Although chickens are dietary experimenters, eager to sample most everything, they seem to have an innate sense about what's good to eat, and what's not. Chickens always seek out their favorites, such as bugs, insects, seeds, grains, and tender succulent greens. Always use common sense in managing your chicken flock, because there's an exception to everything.

There are many shades of toxicity when dealing with plants and chickens. Here are a few things to watch for:

- ✓ Plants have varying degrees of toxicity: Deadly, toxic, and mildly toxic. For instance, milkweed (*Asclepias spp.*) is deadly poisonous for chickens.
- ✓ Certain parts of a plant may be toxic, while other parts of the plant are fine. An example is tomato leaves, which are toxic, yet its fruit is edible.
- ✓ A plant may be toxic at certain stages of its growth, and not at others.
- ✓ A plant can have a toxic part, but the quantity ingested to make it poisonous is highly unlikely. For example, apple trees have seeds that are *cyanogenetic* (they have the capability to produce cyanide, which is toxic). But chickens are unlikely to be able to eat a large enough quantity of apple seeds to harm them.
- ✓ Plants can be toxic to other animals, such as dogs, cats, and tropical birds, yet may be fine for chickens, and vice versa. In other words, a toxic plant might be harmful to one and not another.
- ✓ A plant may be toxic in a natural state, and edible after being processed. An example is the walnut. The shells are highly toxic to chickens, but after the nut is processed, the nutmeat is edible. In this case, it's wise to grow walnuts where chickens can't reach them, and then hand feed the processed foods to them as snacks.
- ✓ Age of your chickens makes a difference. Some plants and foods may be toxic to chicks, and fine for hens and roosters.
- ✓ Some chickens within a flock may have better immunity to a toxic plant than others in the same flock. Also, if hens have experience foraging in their environment, they're at an advantage to stay away from the plants that are toxic, then new chickens being introduced.
- ✓ Toxic plants can be a very long and complicated list. It's not always known how chickens will respond to certain plant varieties. A good idea is to consult with your local extension office, or nearest agricultural university with a poultry department, as to specifics on a certain plant you are concerned about.
- ✓ When you're looking at any list of toxic plants, consider the authors, their knowledge, research, and authority on poisonous plants. Poisonous plant lists on the Internet may not always pertain to free-ranging chickens.

Be on the defensive about what grows in your chicken garden and what your chickens have access to. Know which existing plants in your yard are potentially poisonous. Should you keep these trees or plants, or take them out. Before you plant anything new, always check to see whether it's poisonous to chickens. Watch what you feed your chickens, and make sure anything you give them is safe for them.

Poisonous checklist for free-ranging chickens

Poisons aren't just limited to plants; chemicals and other elements can be harmful to chickens as well. Use this checklist when removing possible poisons from your garden:

- ✓ Remove any hazardous materials and harmful chemicals out of your chickens' space. Keep your garden clean and clutter-free.
- ✓ Transition to an organic lawn and garden, practicing sustainability, composting, organic amendments, and mulching, with natural insect control and pest controls. Chickens are a big part of this transition, but you can also grow plants that inhibit pests and attract beneficial insects. Stop using chemical pesticides, fertilizers, and poisons.
- ✓ Educate yourself on things that are poisonous to chickens. Beware of culprits such as avocado trees dropping their fruit. Poisonous mushrooms can pop up from nowhere in moist conditions.
- ✓ Replace softscape that can be poisonous, such as Oleander shrubs. Try adding more edible landscaping (see Chapter 7). When adding perennials and annuals, check that they aren't poisonous to chickens.
- ✓ Fence off known toxic plants, like rhubarb plants that have toxic leaves. Fence in flowerbeds planted in bulbs.
- ✓ Acclimate your chickens slowly into a free-range chicken garden. It's helpful to have older hens that can show younger hens how to maneuver the garden.
- ✓ Never underfeed your chickens. If you do, they may be forced into eating something poisonous. Never confine chickens next to a potentially poisonous plant, shrub, or tree.
- ✓ Check your list of acceptable treats to give chickens, and keep a general list of poisonous plants to chickens handy.

Poisonous ornamental plants

Even though many ornamental plants are mildly toxic or poisonous to chickens, they're highly unlikely to eat these plants while free-ranging. While sheep, goats, and other livestock animals will eat toxic plants, chickens rarely do.

When chickens eat something poisonous, it's usually because someone unintentionally fed them something poisonous or underfed them while they were confined and exposed to something poisonous.

The following are some of the more common ornamental plants potentially toxic, yet unlikely that chickens would freely eat these. We include this list to show you how many of our ornamental plants have surprising toxic qualities.

- ✓ **Azalea:** *Rhododendron spp.*
- ✓ **Boxwood:** *Buxus spp.*
- ✓ **Buttercup family:** *Ranunculaceae*. This family includes anemone, clematis, delphinium, and ranunculus.
- ✓ **Cherry laurel:** *Prunus laurocerasus*.
- ✓ **Daffodil:** *Narcissus spp.*
- ✓ **Daphne:** *Daphne spp.*
- ✓ **Foxglove:** *Digitalis spp.*
- ✓ **Honeysuckle:** *Lonicera spp.*
- ✓ **Hydrangea:** *Hydrangea spp.*
- ✓ **Ivy:** *Hedera spp.*
- ✓ **Jasmine:** *Jasminum spp.*
- ✓ **Lantana:** *Lantana spp.*
- ✓ **Lily of the valley:** *Convallaria majalis*.
- ✓ **Mexican poppy:** *Argemone mexicana*
- ✓ **Monkshood:** *Aconitum napellus*.
- ✓ **Mountain laurel:** *Kalmia latifolia*.
- ✓ **Oleander:** *Nerium oleander*.
- ✓ **Rhododendron:** *Rhododendron spp.*
- ✓ **Sweet pea:** *Lathyrus spp.*
- ✓ **Tobacco:** *Nicotiana spp.*
- ✓ **Tulip:** *Tulipa*
- ✓ **Wisteria:** *Wisteria spp.*
- ✓ **Yew:** *Taxus spp.*

Poisonous edible plants

The following list contains suggestions for edibles to avoid with hand-feeding and free-ranging chickens:

- ✓ Avocado skin and pits contain persin, which is toxic to chickens.
- ✓ Avoid citrus juice and skins. We know of many theories why you shouldn't give citrus juice and skin to chickens. One reason is that their bodies have the rare capability of manufacturing vitamin C on their own. Additional vitamin C is excessive.
- ✓ Don't give chickens any edible containing salt, sugar, coffee, or liquor.
- ✓ Uncooked raw or dried beans contain hemagglutin, which is poisonous to chickens.
- ✓ Raw green potato skins contain solanine, which is poisonous to chickens.
- ✓ Onions are a poor food to give to chickens because onions flavor eggs. Large quantities of onions can be harmful to chickens, affecting their red blood cells, causing hemolytic anemia or Heinz anemia.
- ✓ Avoid feeding or free-ranging chickens specific unshelled nuts of walnuts (*Juglans spp.*), black walnuts (*Juglans nigra*), hazelnuts (*Corylus*), and pecans (*Carya illinoensis*).
- ✓ Don't give your chickens leaves of rhubarb, potato, or tomato plants.

Deadly poisonous plants found in pastures

These plants are not only extremely poisonous to poultry, but also to many other types of livestock and humans. This is not an inclusive list, and be aware that these plants can be found in other areas besides pastures, such as meadows, wilderness areas, and sometimes in gardens as volunteers. These are the types of plants you absolutely should never expose your chickens to:

- ✓ **Black locust:** *Robinia pseudoacacia*.
- ✓ **Bladderpod:** *Glottidium vasicarium*.
- ✓ **Death Camas:** *Zigadenus spp.*
- ✓ **Castor bean:** *Ricinus communis*.
- ✓ **European black nightshade:** *Solanum nigrum*.
- ✓ **Corn cockle:** *Agrostemma githago*.
- ✓ **Horsenettle:** *Datura stramonium*.

- ✓ **Milkweed:** *Asclepias tuberosa*. And other varieties.
- ✓ **Mushrooms:** *Amanita* spp. Death Cap, Destroying Angel, Panther Cap. Extremely deadly and poisonous if ingested.
- ✓ **Jimsonweed:** *Datura stramonium*.
- ✓ **Poison hemlock:** *Conium maculatum*.
- ✓ **Pokeberry:** *Phytolacca americana*.
- ✓ **Rosary pea:** *Arbus precatorius*.
- ✓ **Water Hemlock:** *Cicuta* spp.
- ✓ **White snakeroot:** *Ageratina altissima*.

Steering clear of the Death Cap

Mushrooms are wonderful to eat and add distinct flavor to pizzas, salads, soups, and many other foods. However, not all wild mushrooms are safe to eat. A member of the *Amanita* family, the Death Cap mushroom is one of the most deadly mushrooms. Once ingested, this mushroom stops the formation of certain proteins in the liver and kidney, leading to coma and death.

How do you know if you have Death Cap growing in your yard? Here are 6 signs to look for:

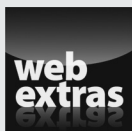
- ✓ **Look for a whitish stalk.** It is about 6 inches long and has a large, round bulb at its base.
- ✓ **Measure the cap.** The cap is about 2 to 6 inches wide and can be pale green, olive green, or yellow in color. It usually has one or more patches of thin, white veil tissue.

- ✓ **Dig to find the mushroom's stalk.** The lower part of the stalk is usually buried in the soil around the tree it is attached to.
- ✓ **Check out the edge of the cap.** It has a flat, wave-like edge to it.
- ✓ **Look for white gills.** The Death Cap has white gills on the underside of the cap that are crowded closely together.
- ✓ **Smell the mushroom.** The Death Cap has a similar smell to rose petals.

It's always best practice to never eat a mushroom, or any other plant, that you don't absolutely know the origin or safety of.

Part III

Chicken Care: Tending to Your Flock



Head to www.dummies.com/extras/gardeningwithfreerangechickens to discover more information about how to add other livestock to your space.

In this part . . .

- ✓ You find out what makes chickens tick. Understanding chicken behaviors can help you create a wonderful environment for them and for you.
- ✓ We show you that chickens have unique personalities. Bonding with them through nurturing and even training will enhance your relationship with your chickens.
- ✓ We give you all the ins and outs on handling predators. Predators are the biggest threat to your chickens; learn who they are and what safety measures you can take to guard against them.
- ✓ Find ways to fight your chickens' illnesses and injuries and come to terms with dealing with death.

Chapter 9

Know Thy Flock: Understanding Chicken Behaviors

In This Chapter

- Identifying normal chicken behavior
 - Spending time training and bonding with your chickens
-

To house your chickens and create a safe free-ranging space for them, you need to invest some time planning for a chicken coop, a secure outside pen, and landscape materials. But, it's just as important to invest time in your chickens too. Knowing their behaviors really helps to provide a happy home and mutually beneficial environment for your chickens and you.

If you haven't had chickens before, it helps to know what's normal behavior — and what's not. If you've never seen a hen giving herself a dust bath, you may think she's trying to bury herself rather than simply relaxing and cleansing her feathers. You may be alarmed if your hens start losing their feathers dramatically, even though it's simply molting — a normal renewal and replenishing behavior. Hopefully, you'll have your chickens for many years, and they'll provide you with many years of enjoyment and fresh eggs.

This chapter aims to cover different chicken behaviors to guide you through chicken ownership. We also discuss training your chickens — a fun way to interact with your flock.

Checking on Normal Chicken Behavior

Chickens are consistent in their behavior, and it doesn't change much. What is surprising is the varying individual chicken personalities, which are predominant early in life. Cartoon characters do a great job of mimicking chicken behavior and providing exaggerated humor on their antics. Many people new to raising chickens are surprised by how much fun chickens are, amusing in the way they conduct themselves, and how endearing they are.

In the following sections, we walk you through normal chicken behavior in their lifecycle from chick to old age. We also talk about bonding and how it can help bring about behaviors you desire. We cover normal behavior around the coop, and finally, we cover normal behavior in your garden landscape while the chickens are free-ranging.

Noting a chicken's cycle of life

In this section, we walk you through each stage of life and what you can anticipate during each cycle. Unfortunately, at the end of the lifecycle comes death. We cover what you need to know about aging and dying chickens in Chapter 10.

Chicks

A fertilized egg, which is either incubated or sat on faithfully by a brooding hen, develops and hatches as a healthy chick in 21 days. Chicks are very vulnerable at this age, so it is important they are warm and safe.

Help chicks find their food and water right away. Chicks begin with a formulated chick starter. Their first water source must have a narrow opening — not a large opening — to keep the chicks from risk of drowning.



Chicks require specialized food and vaccinations. Check out *Raising Chickens For Dummies* by Kimberley Willis and Rob Ludlow (Wiley) for additional information on maintaining healthy chicks.

Chicks grow rapidly. They're active, they sleep together, and they show their personalities even at this young age. By six weeks, chicks are fully feathered and may still need supplemental heat depending on the weather. They graduate to a grower ration or mash. This ration helps young pullets grow strong bones and develop a normal body weight.

Pullets

A *pullet* is a young hen between 20 weeks and a year old. She continues to grow and feather out. Depending on her breed, she's likely to start laying eggs around six months old. Some breeds start laying eggs earlier, and some start later. Put your hens on a formulated balanced laying feed a month before you anticipate your hens starting to lay eggs. At this stage of maturity, you may recognize that some of the pullets are different in appearance and size. It could mean you have roosters in the mix. Continue to hold and bond with your pullets so they're at ease with you. This could take a lot of holding, but it is worth it to have pullets that are very calm and comfortable with you.

Hens

Hens are mature female chickens over a year old. A hen's ovary contains all the undeveloped egg yolks that she'll lay over her lifetime. When her egg-laying mechanisms kick into action, she'll lay an egg every 24 to 25 hours during peak production. Her breed, health, and environment also determine the number of eggs she lays in her lifetime. She lays her eggs over the course of her lifetime in a bell curve model.

A hen that you've bonded with is a joy to have in your flock. Bonding is done by spending gentle time consistently caring for, holding, and training your hen.

In their second year of life, hens usually begin to molt and then do so every year after. Molting is a process in which hens (as well as roosters) lose their feathers; in addition, hens stop laying for a number of weeks while molting. Your hens can look alarmingly awful until eventually new feathers grow in. This process of renewal is natural. It usually happens from fall to winter and is tied to decreasing daylight length, when daylight is less than 14 hours a day. You can supplement artificial lighting during this time to keep your hens laying, but we prefer letting a hen replenish herself and take a natural egg-laying break.

Eventually, as she gets older, a hen becomes less and less productive in egg laying. She may not be as quick on her feet or capable of jumping to the night roost bar. Let her sleep in the nesting boxes. She'll still continue to be effective in weed and pest control free-ranging. We like older hens; they lend stability to flocks and show younger hens the ropes.

An older hen that has reached the end of her lifecycle is inactive, listless, and usually has a pale comb and wattles (if she has wattles), which are the two fleshy lobes of skin that hang down on either side of the beak. She may be suffering from something wrong internally. If a hen makes it to an old age, she's a lucky hen who has led a great life. Each chicken breed has estimated life spans, just as they have estimated egg-laying capacities.

Roosters

A rooster under one year of age is called a *cockerel*. Hens don't need roosters to lay eggs. But a rooster is needed to fertilize hens' eggs, which if properly incubated or sat on will develop and hatch as chicks.

Roosters have colorful personalities and beautiful plumage. Having a rooster in your flock has pros and cons. Roosters can be loud, aggressive, and unpredictable. Some roosters are exceptional in manners and behavior. If you have one of these types, you're lucky.

Roosters take their role of guiding, managing, and protecting their flock very seriously. If you free-range your chickens, having a rooster in your flock is added protection. A rooster will fight to the death to protect his hens by pecking and throwing his body weight at his target with his spurs, strong legs, and nails. He will crow like a watchdog as well if he hears something unfamiliar.



Roosters aren't for everyone. We don't recommend owning a rooster if you have children, are in close proximity to your neighbors, and have not raised chickens before.

If you do choose to have a rooster, keep in mind that they can be very gentle with their hens or very aggressive. Two or more roosters in a flock may lead to trouble and fighting. A good hen to rooster ratio for fertile eggs is 12:1. A rooster can mate with hens in his harem 10 to 30 times a day. He usually mates over the course of a day, although he can mate several hens in a short time, too. As roosters age, they can lose interest in mating, and they can also lose some of their fertility. Fertility in roosters can vary from breed to breed.



Early bonding, holding, and training help roosters to be more docile and comfortable with you. Hand feeding encourages bonding too.

Creating behaviors through bonding

As soon as you get your chicks, pullets, hens, or roosters, you want to bond with them. Bonding is defined as creating a mutual feeling of trust or interest, in this case between you and your chickens. By bonding with your flock, you'll have chickens more receptive to training and behaving as you wish.

You can begin to bond with your flock by holding each one of them for periods of time and spending time with them so they become familiar with and accustomed to you. You want to be calm and soft voiced; don't make brash movements. That goes for everyone who will be taking care of your flock.

It takes quite a bit of time for your chickens to feel at ease with you. Be consistent in holding them and constant in your voice. Some breeds are more receptive than others. Know a breed's temperament before purchasing. The more docile a chicken breed, the more quickly this particular breed will be comfortable with you. If you choose chicken breeds that are flighty or aggressive, obviously you have your work cut out for you.

Buying chicks and bonding with them early in their lives is ideal. Young pullets respond well to bonding and to a set routine you establish. If you adopt mature hens, they may never effectively bond with you. They may remain skittish around you.

A good sign that your hen has bonded with you is when she squats, flattens her back, and maybe even stammers her feet. This is a normal submissive pose or mating position for an oncoming rooster. Some hens do this a lot, and others never. This behavior is the closest gesture to an act of affection from a hen. She is being submissive to you and displaying a distinct connection to you. Pat her on her back to respond back. Note that you'll never see a rooster do this.

Watching flock behavior around the coop

Chickens are active, social, gregarious creatures, so we recommend a flock of at least three hens. They're just happier together in a group. This section gives you details on what you can expect from your flock as the chickens interact and go on with their daily lives around the coop.

Pecking order

A *pecking order*, or ranking of the flock from most dominant to least dominant, has beginnings as soon as chicks hatch or are put together. A rooster in a flock is always "top dog," but hens within the flock, or with the absence of a rooster, have a pecking order too. A dominant hen emerges, and the pecking order is established among the rest of the hens in descending order. Each hen knows her place in the pecking order. The dominant hen has first pick of food, roosting bar, and just about anything else.

If you observe your chicken flock for a period of time, you can easily tell the least dominant hen in the pecking order. She's the hen that sleeps in the nesting box because the others won't make room for her on the roost. She's the hen that gets a sharp peck for getting too close to the feed bucket. Always give this hen extra attention and care to make sure she stays healthy. She's usually the sweetest hen of your flock too.

Chickens that have been raised together since they were chicks generally get along very well. When you add a new member to the flock, you'll always see a paradigm shift of the pecking order as the chickens figure out where this new member is going to fit in.

Eating

Chickens are born to eat and are constant eaters. When hens aren't sleeping or laying eggs, they occupy their time eating. That's why allowing chickens to free-range is such a winning proposition. Allowing them to forage in a free-range situation prevents boredom and allows them diversity in their natural diet. Through eating and giving them treats, you can train your chickens.



Allow your flock access to a complete laying feed, whether it's a mash, crumble, or pellet. Always provide fresh water along with laying mash for your chickens. When foraging, your chickens may not get all the necessary ingredients required to keep up their caloric energy needs for the business of egg laying and the protein to replenish feathers from molting.

Chickens process their food quickly, passing what they eat completely through their digestive track in about two and a half hours. Chickens that have eaten recently have a soft bulgy mass below the neck area. This area is called the crop, and its function is storing and softening food before it travels further down the digestive system. A bulgy crop is a good sign that your chicken is healthy and eating well. Because chickens live to eat, a chicken that isn't eating indicates that something may be seriously wrong (see Chapter 10 for more on illnesses). The exception is hens that are brooding, laying on a clutch of eggs (see the "Brooding" section later in this chapter). Hens sacrifice and almost starve themselves to stay on the nest and keep their cherished eggs warm.

Give your chickens access to their feed all day long, and allow them to freely feed. If allowed to free-range, they'll certainly eat considerably less of their laying feed. Because chickens don't eat in the dark, store your feed in a safe, protected container until you pull it out the next morning for your chickens. Leaving a feed bucket inside your chicken coop at night only attracts free-loading mice and rats.

Sleeping

Chickens like to sleep shoulder to shoulder on a roosting bar inside the chicken coop. The roosting bar is like a perch and is situated two to three feet off the chicken coop floor. The height makes them feel safe. Figure 9-1 illustrates a flock of chickens roosting for the night.

Whether chickens have been free-ranging or have been in a secure outside pen, at dusk they file into the coop and start jockeying for their positions on the roosting bar. Night after night, your chickens head to the roost to sleep for the night. Chickens sleep soundly, almost as if they're in a trance. Chickens don't have to be coaxed; they naturally head to their roost. Don't forget to do your part by closing and securing your chickens in their coop every night.

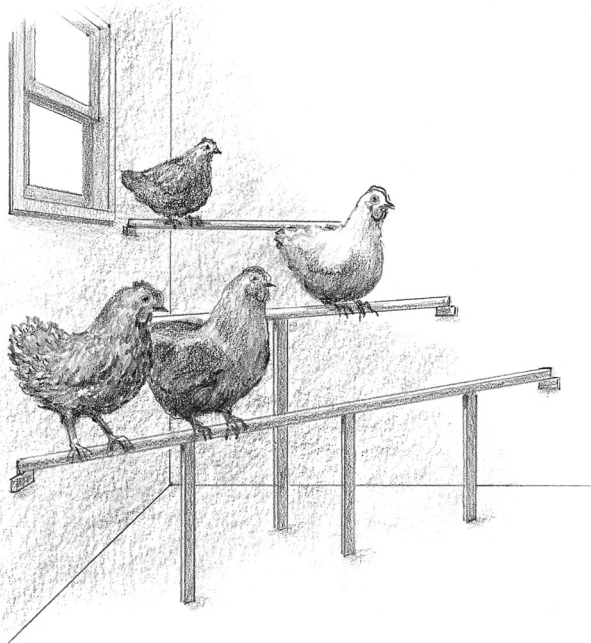


Figure 9-1:
Chickens
roosting
in their
chicken
coop.



Always do a head count before locking the coop for flocks that free-range. You may have to search and find a missing hen.

This is a very vulnerable time for your chickens if their coop is open and night has fallen. It's vital to always close your coop for the night. If you can't close your chickens in the coop, enlist someone who can. Another helpful option is investing in an automatic chicken coop door that can be programmed when to open and close. See Chapter 11 for more information on automatic door openers for your chicken coop.

Laying

Hens take their egg laying seriously. Hens head for the chicken coop if they're free-ranging, or stay in the chicken coop until their eggs are laid, and then head out to free-range.

Occasionally, you might have a hen who lays her eggs out in the garden. Pay attention to the eggs you collect from your hens each day. If you are coming up short, perhaps one or two of your hens are laying outside of the coop. Look under shrubs for clutches of eggs. It is wise not to eat these eggs as you don't know accurately when they were laid.

Usually hens lay their eggs in the morning hours. They choose a nesting box and start to arrange and prepare the bedding within for eggs. Sometimes they choose a nesting box that has an egg in it already. One hen may even join another hen in the same box, even if she's already in the process of laying an egg. Hens can be at their noisiest, clucking and cackling, after they lay eggs. And they may grunt or peck at you, wanting to be left undisturbed while laying eggs.



A mature yolk drops from a hen's ovary approximately every 25 hours into a soft funnel called an oviduct. As the yolk travels through the oviduct, it can be fertilized if exposed to a rooster's sperm. Continuing on its path through the oviduct, layers of egg white albumen and protective membranes are added, the protective eggshell forms over it, and the sealing bloom covers all its pores to keep in freshness. The completed egg emerges from what's called the hen's vent, still warm from the hen's body. The hen squats and drops her egg in the nesting box, ready to be collected.



A hen lays her egg an hour later each day and eventually resets herself by skipping an egg-laying day. She then begins to lay in the morning hours once again for several days. That's why you don't have laid eggs from her every day.

Hens lay eggs almost automatically and like clockwork. Keep your hens happy, healthy, and well fed and you'll enjoy dozens of beautiful, tasty eggs from them.

Brooding

Brooding is the natural process of a hen sitting on a clutch of fertilized eggs to keep them warm for the 21-day incubation period in which developing embryos hatch as chicks. A clutch of hen eggs is a group of eggs.

Some breeds tend to be natural brooders, such as the dual-purpose breeds, and some breeds have had their brooding instinct bred out for better egg production. Orpingtons and Silkies are well known for their excellent brooding instinct. Broodiness is sometimes frustrating to a chicken flock owner if there are no fertile eggs and there is no intention of raising chicks. Broody hens may stop laying and can stop eating while they sit on a nest for weeks at a time. They lose weight, look ragged, and return to the nest immediately after they have been displaced from it.

If you have a hen that broods over unfertilized eggs, continue to collect the eggs regularly, so you don't end up with old eggs. A hen that becomes broody is reacting to her natural hormonal urge, which is about a three-week time period. It is possible a hen can go into another consecutive brood period of three weeks. Little will persuade her off of her nest, except a quick bit of food and water. Do not try and persuade her, keep removing eggs from under her,

and eventually nature takes its course, and a brooding hen moves on to her normal activities.

If you're planning on raising chicks, a brooding hen is a match made in heaven. A brooding hen doesn't have to be the same breed as the eggs under her. She just has to have the instinct to warm and sit on those eggs for the 21-day period. Other hens in your flock may lay in the same nesting box as your broody hen to add to the clutch.

Brooding and incubating your own chicks is a large subject. Gail Damerow has written a comprehensive book called *Hatching & Brooding Your Own Chicks* (Storey). This book also covers turkeys, ducks, geese, and guinea fowl.

Knowing chicken behaviors in the garden

Chickens are active, and curious, and always on the go. They prefer being able to move about, which makes free-ranging ideal.

Normal behavior for chickens free-ranging in the garden includes all the wonderful sustainability attributes we mention in Chapter 1. Your chickens are part of your weed and pest control, aerating your soil, contributing to your compost pile, and fertilizing your landscape randomly. Chickens follow a few behaviors as they free-range in your garden. The next sections cover those behaviors.

Roam

Chickens free-range in your garden, usually as a unit. Chickens are sociable and tend to stick together as a flock. Occasionally, you may have a few hens that venture away from the flock. If by chance a hen goes into the coop to lay an egg or gets separated from the rest of the flock, she's likely to become agitated and to cluck and squawk until she's reunited with the rest of the flock. Chickens know they're safer together than separated by themselves.

Chickens that have been free-ranging for a period of time will stop in the coop for water if it isn't provided in the landscape or on the property and to eat some lay feed.

Chickens are curious, venturing about their domain to explore. They like to roam and soon have their favorite spots. When a flock is acclimated to its chicken coop and free-range environment, chickens seldom stray from the domains of home unless they're facing circumstances like a predator attack.

Recycle

Chickens are motivated to eat and find food. It is their favorite thing to do. And when they relieve themselves, they're great recyclers. Chickens naturally recycle bugs and pests into desirable manure and tasty eggs. They love your kitchen scraps. They think nothing of investigating other livestock manure.

Dust baths

Chickens do occasionally take time out for dust baths. They fling with their feathers loose dirt on their backs, necks, and shoulders. It can take place anywhere in the garden, perhaps under a favorite mature shrub that has warm sunny sandy soil. The dirt is a way for them to clean their feathers.

With their dust baths, chickens create a large indentation, sinking below the soil level as much as they can. A chicken having a dust bath is a relaxed chicken.

If you don't have a sandy soil type, which is perfect medium for chickens to create their dust baths in, you can create and customize a little dust bath area for your chickens. Find a nice, out-of-the-way spot. Build a square framework with 2x8 boards, and bury the framework halfway into the ground. Fill it with clean sand or a mix of sand and fine dirt. Make it big enough for your chickens to enjoy a dust bath together. Your chickens will love you for it.

Strutting their stuff

Chickens are naturally ornamental with their soft, colorful feathers. Just by free-ranging in your garden, they make a pretty sight and add a soothing ambience. Chickens are low maintenance with high appeal.

Training Your Chickens

Chickens can be trained. They have keen eyesight and are extremely motivated by their desire to eat. Training your chickens is key to effectively managing your chicken flock. By training your flock, you can have them come to you whenever you like, herd them along if necessary, and generally have them respond and behave for you as you wish.

Training works better with smaller-sized flocks of fewer than ten chickens. The more chickens in a flock, the harder it is to manage them.

You certainly don't have to train your chickens; however, it will be harder to manage them when you want them to return to the coop, come away from an

area, and when there is danger in the garden, and so on. Have you heard of the expression “unruly as herding cats”? Herding untrained chickens is like trying to herd cats!



It helps to establish a routine with your chicken flock. Your chickens like routine and a set schedule. Open their coop about the same time in the morning, put out their feed bucket, clean their manure box, collect eggs, let them out to free-range, and close them up at night about the same time each day and night.

Teaching your chickens to come to you

As your chicks grow into full-feathered young pullets, you can introduce them to treats and training. You can choose a distinct whistle, bell, or what we prefer, an inexpensive pet clicker from pet discount stores.

Having the ability to call your flock to the chicken coop in a free-ranging situation is invaluable. Training your chickens is simply rewarding their good behavior with food when they do exactly what you ask them to do. They'll associate the sound of the pet clicker, a certain phrase you repeat, a whistle, or whatever you choose, with a reward or some type of food.

Training takes time and requires some patience. You can start the training wherever you're most comfortable. It can be in the outside pen, in the garden, or while they're free-ranging. It's important to note that if your chickens have already had a lot of food or have recently been let out to free-range, they may not be tuned in to training. Here are some steps to teach your chickens to come on command:

- 1. Stand in view of your flock, holding their favorite treats in your hand at their eye level.**

We recommend a treat your chickens like but don't have all the time — like a warm roll, fresh cranberries, or sunflower seeds. Choose a treat you know they love.

- 2. Wait for the dominant hen in your flock, or the best forager, to see the treats in your hand and come running to you.**

The rest of the flock will follow.

- 3. While your chickens are eating out of your hand, click your pet clicker or make your signal.**

Click your pet clicker to make a consistent noise or signal, and use that consistent signal. This noise will be the signal for your flock to come to you when they hear it.

4. Repeat Steps 1 through 3 over and over every day and consistently over a period of time.

This step re-enforces that the chickens receive a treat for coming to you, and your flock will eventually catch on to come to you when you use your clicker.

Eventually, the chickens will come to see you, without hearing a clicker, when you appear in your garden or property. This training makes life much easier for returning them to their chicken coop or just checking on them.

You can also train chickens to fly to your arm, walk across elevated ladders, count items, or other fun and easy tricks you may have in mind. It is the same concept of a signal and a reward, repeated over and over. Use a different signal so as not to confuse with the “come” command.

Herding your chickens

Herding is another behavior to teach a young flock. Because chickens usually move around in a unit together, herding them is fairly easy. Suppose you forget your clicker and you need to herd your flock back to the coop. Here are the steps you can use:

1. Align yourself behind your flock and gently clap your hands together.

A small gentle clap is much more effective than a loud clap. Your flock starts moving in a formation toward the direction or destination you want to go.

2. If your flock starts veering off target, use your arms as guiding rudders; use a single arm stretched out, in the direction they’re veering toward.

They’ll see your outstretched arm and adjust to the direction you’re herding them to.

This is a very simple method of herding. Increase its effectiveness by starting this herding technique when your flock is young. Be consistent, and they’ll understand the herding concept.

Sometimes one member of your flock breaks out of the herd formation and takes another direction quickly. If you’re quick to respond with an arm to adjust the direction, you can usually bring all your chickens into a herd formation moving forward once again. Herding works best in small-size flocks under ten chickens.



Dogs are great at herding chickens, too. Make sure you can trust your dog.

Handling Changes in a Flock

Whenever you have chickens, you'll have to deal with changes in your flock. These changes are just part of raising chickens. Your best friend has too many chickens in her flock and asks whether you can adopt three of hers. You see Golden-Laced Wyandotte chicks for sale at your local feed store and buy three.

Your chickens aren't as adaptable to change as you may be. Chickens like consistency. Anytime you introduce new chickens to a flock, lose members of a flock, or introduce a flock to a new home, your chickens are going to be stressed and will have to make adjustments. Their pecking order will be affected (see the earlier section "Pecking order" for more information).



Anytime you are introducing new chickens to a flock, it is extremely important to quarantine the new chickens separately for at least a month. New chickens need to go in a safe place such as a garage, a separate clean and disinfected coop, or some type of reasonable cage. Chickens might be carrying disease or parasites, which you don't want to introduce to your flock.

Introducing a new home

Introducing chickens to a new home should be done slowly and when you have time to observe how they're doing. The most common example of when you'll need to introduce chickens to a new home is when you get your first chicks. We recommend raising chicks in a dry, warm area such as a garage until they're fully feathered and too big and messy for their present home. That's when they're ready for their own chicken coop.

Chicks can be introduced to an outside coop around 6 weeks of age. Use common sense as there are variables to consider such as time of year, temperature, and weather. This example is for a flock of chicks being introduced to a new chicken coop.



If you have chicks that you will be integrating with an existing flock comprised of older hens, you must wait longer and introduce them to the existing flock when they are around 12 weeks old and are considered pullets. This gives them time to grow and develop for better integration with the existing flock. Observe your pullets and older hens frequently and carefully to make sure there is no fighting, pecking, and problems.



Chickens, especially pullets, are sensitive to their environment, temperatures, and any radical changes. Observe them for a period of time to make sure they find their feed and water, and make sure they aren't fighting with one another.

The best time to introduce pullets to a new home or chicken coop is spring to summer. The temperatures are getting warmer and warmer. Have your chicken coop, feeders, and waterers thoroughly cleaned and disinfected if a previous flock was in the coop. Cleaning and disinfecting removes any possible parasites and any potential for transmitting disease. Put down fresh bedding, along with fresh food and water. Carefully transport your pullets in a cardboard box with holes cut out for air.

Your chickens will be wild with excitement for the increased room and new environment. Keep your chickens in the coop for several days until they get acclimated and feel comfortable in their new coop. Eventually, you can let them into your garden or property, again with close supervision. Keep chickens newly introduced to a new coop safely in the coop for at least two weeks, so they understand this is their home. Treats and training can be initiated at this time.

When you do let your chickens out into a new garden landscape or property, they will want to explore and roam everywhere. Eventually, they'll settle down and understand this is their new home and domain as well.

Anytime you introduce a new run, a new area of the garden, or perhaps a mobile chicken tractor, you want to observe your flock carefully and make sure they are happy, eating, drinking, and not fighting.

Introducing new chickens

If you want to introduce new chickens to your existing flock, prepare for an adjustment to your flock and a shift of the pecking order. Take caution when acclimating new chickens to a flock because some chickens in your flock can be resistant to the new chickens.



When adding new chickens to a flock, quarantine them for a safe period of a month before integrating them into your flock. You want to look for mites, parasites, coughing, general health, and anything that would be a potential danger to your own flock. After you assess that they are indeed healthy, you can start the process of socially acclimating them with your chicken flock. For more information on quarantining new chickens, check out *Chicken Health For Dummies* by Julie Gauthier and Rob Ludlow (Wiley).

Introduce new chickens with a fence or barrier between them and your existing flock for a couple of days. During that time, you'll get a sense of how well the new chickens are going to be received. When you feel ready to physically

introduce the new chickens into an existing flock, do it at the end of the day heading into dusk. Closely supervise this integration so the new chickens don't get hurt. Your existing flock may not be happy and may fight, peck, and gang up on the new chickens. This transition can take a couple of days.

Usually, the new chickens that are used to being together will stick close together and slightly apart from the others. A new pecking order will be established. If the newcomers are aggressive and dominant, they may be at the top of the pecking order. If they aren't dominant, they may be at the bottom of the pecking order and potentially bullied. Over time, most newly introduced chickens can come together in a peaceful flock.



If your new chickens aren't accepted, they can be mercilessly pecked, jumped on, hurt, and injured. Watch carefully that your flock is integrating smoothly.

If aggression persists towards a new member of the flock, separate them out, with the barrier method, so they see each other but can't reach each other. Usually with time, they can be once again slowly integrated into a flock.

Chapter 10

Caring for Chickens: Predators, Sickness, Injury, and Death

In This Chapter

- ▶ Discovering easy predator prevention methods
 - ▶ Identifying common and uncommon predators
 - ▶ Protecting your chickens from common poultry diseases and parasites
-

You try to give your chickens the best care, but accidents happen, illnesses come on, and injuries occur. This chapter covers what to do when the unfortunate happens to your chickens.

Chickens have a lot of predators. Being mindful of what to look for and how to prevent attacks helps to keep your flock safe. Chickens are prone to internal and external parasites thanks to their free-range foraging. It helps to know some of the signs of an unhealthy chicken. Injuries can happen to chickens just like any other animal — we provide details on how to care for an injured chicken. And, lastly, even though it's hard to think about, chickens die. Knowing how to handle aging chickens and what to do when they die makes the process easier to handle.

Using Common-Sense Predator Protection

Chickens, and hens in particular, have very little defense from predators, other than escaping by a half-wing flight to a higher structure or hiding under a structure in the garden landscape. Roosters certainly have more defense than hens with their protective nature, sharp beaks, strong legs with spurs, and long nails. It is the responsibility of chicken owners to provide the best protection for their chickens. Chicken owners have to be proactive when protecting their chickens.



Predators are sly and opportunistic, taking advantage of any lucky moment to reach your chickens. They can spy a chicken coop door left open after dusk. They constantly patrol their territory, looking for anything amiss. They look for the weak fence that will lean and give with a little force backed by some weight. They search for holes in a fence. They scale fences easily. They slip a deadly paw through a half-inch opening. They dig holes under a fence. They soar above their territory and know chickens are below. They wait patiently until the right time to pounce. They can enter a mouse hole in the garden and slither up into the chicken coop. They can include your friendly neighbor's pets, which are somehow set off. They can be hungry wildlife that are desperate and take chances. Predators can find any of these situations and more.

If you live in a predator hot spot, hopefully you recognize it. These hot spots can occur in lots of places. Some examples include homes near canyons where wildlife can easily slip in and out of your garden, and residences that are next to wilderness preserves or national parks. Or it may be something as simple as a creek close by that serves all kinds of wildlife. It can even be a neighborhood that has many different kinds of dogs that live in it. Natural predators of chickens have had to adapt to development pressure and are sometimes found in different habitats.

Cities and suburbs have as many predators of chickens as rural areas do. Even if you don't think you have predators in your neighborhood, you probably do, but you never have the opportunity to see them. Most of the worst predators are nocturnal. That means they have six hours or more a night to work at finding or creating ways to get into a coop, and this situation is exponentially more problematic if the predator has killed and tasted chicken before.

If you live in a predator hot spot, it may not make sense to have your chickens free-ranging all the time; your flock may be better suited to a confined range situation. We give you several variations of free-ranging and confined ranging of chickens in Chapter 4, to accommodate your lifestyle and for the betterment of your chickens.

Protecting your flock when you're away

When you're on vacation or traveling on business, and you have someone watching your chickens, it's best not to let them free-range. Keep them confined to their coop and the protected outside pen. Pet-sitters, professional or

not, may not be familiar with your garden, the potential dangers with predators, and the quirks of your chickens. Have a relaxing trip, and keep your chickens confined to their chicken coop and secure outside pen until you return.

One of the best defenses in protecting your chickens is common sense management. Use common sense for your chickens, just as you would care for your other pets and animals.

If you're pet sitting a friend's dog, or if friends come over to visit with their dog, keep the dog on a leash or don't let your chickens out to free-range. You don't know how this dog may react. Sometimes a playful dog just wants to play but can be unpredictable.

Always let your neighbors know you have chickens. If your chickens fly over the fence into another yard, your neighbors will know to contact you to return them.

Rules at dusk

If your chickens are free-ranging, one of the most vulnerable parts of the day is dusk. Many predators hunt at dusk and dawn. Chickens are returning automatically to the coop to settle in for the night. Daylight is waning into nighttime. Your best foragers may be lingering in the garden, or your chickens may be in their coop and up on their roost. When chickens sleep, they go into an almost trance in which they're particularly vulnerable. The door is open to the coop, and darkness is coming. Predators feel more comfortable approaching the coop, and the door is open. A predator can reach your chickens in their coop.

The best solution is to close the coop and securely lock your chickens in before nightfall. Be sure and do a head count of your flock, and that all are accounted for. This task can be hard day in and day out, especially if you have other obligations. One solution is to use an automatic door for your chicken coop that's set on timers and is also photosensitive. Scheduling your chicken coop door to open at a certain time in the morning, and close just a short time after sunset, is a great idea. You can find automatic doors for chicken coops on the Internet. These manufacturers are reasonable, and their products can save you a lot of time and heartache. See Chapter 13 for more information on automatic chicken coop doors and internet sources.

Another way to combat darkness is to consider installing a motion sensor light near your chicken coop. It will come on automatically at night when it senses movement. Predators like to attack by surprise, and a sudden light surprising them may encourage them to flee. Your chicken coop should be situated far enough from your home so that this type of light isn't intrusive to you, but could catch your attention.

Fences as a line of defense

Predators are sly and come from the sky, ground, and underground. Fencing is one way to keep them out. Protecting your free-ranging chickens is certainly trying at times. You have to be on your guard for weaknesses in your fences, unusual animals sighted in your area, new neighbors' dogs, hawks that come at wintertime . . . in other words, you always have to be one step ahead of potential predators.



Birds of prey can attack by air, spotting your chickens from afar with their keen sight. When keeping your hens in a contained area (like an outside pen) for a long period of time, protect them with wire hardware cloth on top of the pen, too. Also, keep in mind that when trees are bare in the wintertime in some areas, evergreens can be handy in your landscaping to hide chickens from preying birds.

Some companies specialize in fencing that deters large-scale predators. One type of fencing is called the coyote roller bar, made by Roll Guard, Inc., www.coyoteroller.com. It's a roller bar that's secured on top of a typical six-foot fence that rolls when a coyote, large dog, or animal tries to jump the fence.

The roller bar keeps rolling and doesn't allow the animal to get the grip it needs to scale the fence. See Figure 10-1 for a sketch of the coyote roller bar.

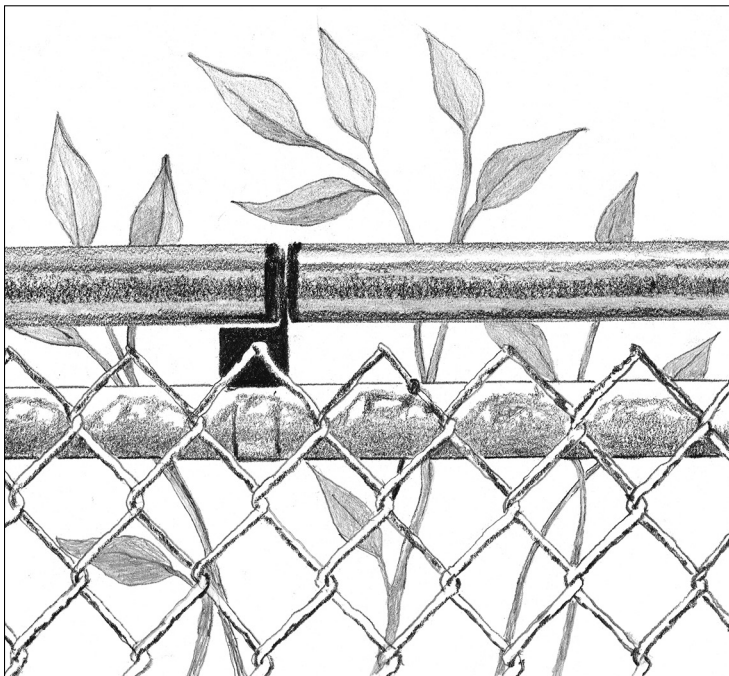


Figure 10-1: The coyote roller keeps a predator from getting the grip it needs to scale your fence.

Some fencing companies make eight-foot fencing of various materials. For most large animals, the sheer height of eight feet is physically impossible to scale. Extra tall fencing may be appropriate when your property borders wilderness areas, like a protected forest, or open canyons.

Another specialty fencing option to discourage predators is double-fencing that's spaced two feet apart. See Figure 10-2 for a sketch of the double fencing. In this example, you can see two secured chain link fences built two feet apart.

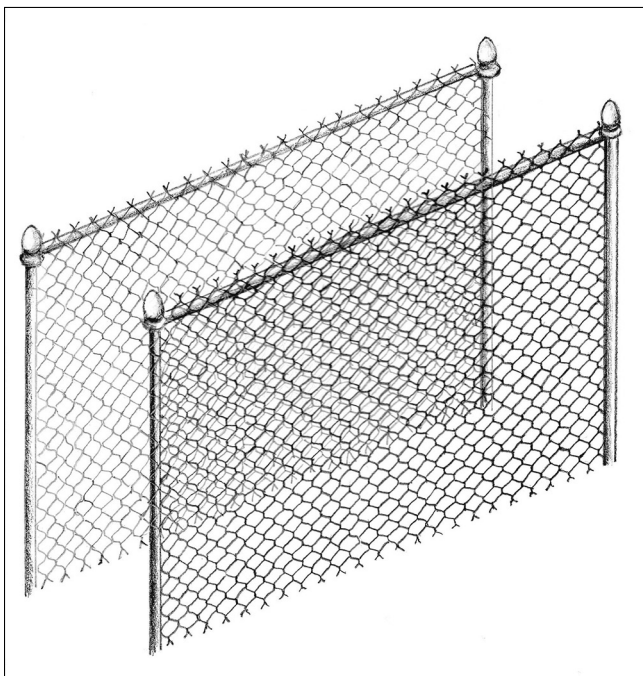


Figure 10-2:
Double-fencing discourages predators.

Most large-scale predators don't have the breadth to jump and clear six-foot fences placed two feet apart. It's physically impossible for them. Of course, double fencing is double the price.

Knowing your surroundings is a good way to determine which fencing option is right for you. Make a list of what predators are in your area and what needs you have for different zones in your landscaping to choose the right fencing.

Consider structures as protection

Your chickens will use the natural landscape components in your garden as protection, such as hiding under shrubs, but actual physical structures can serve as protection for free-ranging chickens as well. We define physical structures as something in the immediate vicinity that chickens can fly to, run under, or perch on in a pinch. Examples of these kinds of physical structures are a chicken coop, storage shed roof, an upside down wooden box with side openings disguised as an outdoor coffee table, a garage side roofline, an arbor, and a pergola.

In a dire moment of reckless pursuit by a predator, these structures can mean life or death. They may also be the difference between losing one chicken to a predator versus the whole flock. Sometimes when one chicken is attacked first by a single predator, the attacked chicken occupies a predator long enough for the rest of the flock to escape to safety.

This picture is grim, but it's a very real situation when you own chickens. If you've ever seen a chicken killed by a dog, ripped apart by a raccoon, or had its head bitten off by a weasel, it's something you never want to experience again. This scene is particularly heartbreaking if your chickens are family pets. In the following list, we look a little closer at these physical structures, and how they protect your chickens:

- ✔ **Chicken coop:** When you build a chicken coop a practical one-foot off the ground, it serves as a structure that can protect free-ranging chickens. Chicken coops should be at least a foot off the ground regardless, for good ventilation, for the ease of keeping the underside of the chicken coop clean, to keep it free from rats nesting, and so it's a safe spot for chickens to flee to. Having a raised chicken coop works well for protection in a pasture environment, too. Large animal predators may reach the edges, but they can't reach the chickens in the center. Predators from the air can't reach under the structure.
- ✔ **Garage and storage shed rooflines:** Any structure that a chicken can fly to that's above seven feet high can offer protection. In Chapter 2, we talk about many of the different chicken breeds available to raise. Many of the dual-purpose or heavy breeds — such as the Buff Orpingtons and Wyndottes — are less agile and don't fly as well as perhaps a sleek Silver Spangled Hamburg. Some breeds are better fliers, but in a predator's attack, the best fliers are able to fly to a height over 6 feet for protection. Large animal predators may have difficulty reaching a height over six feet.
- ✔ **Arbors and pergolas:** Similar in protection to garage and storage sheds, these structures have to be sturdy enough to carry the weight of one or more chickens. Agile chickens can reasonably fly to the tops of arbors and pergolas to escape a ground predator.

- ✔ **Wooden boxes:** Wooden boxes turned upside down with small openings are ideal for chickens to enter and hide from predators. Boxes with small openings work better when the openings are at soil level. These wooden boxes can be decorated, or re-purposed as an outdoor coffee table, or entertaining surface. The concept is similar to a raised chicken coop. Chickens can run to a space unreachable by a ground or air predator.

Watching Out for Chicken Predators

We frequently mention *predators* — one animal preying upon another — throughout this book, because unfortunately predators are so prevalent in raising chickens. Predators prey upon chickens for many reasons, including for food, for survival, and to feed their young. Some predators, such as dogs, may consider chickens a game or sport, something innate in their breed, preferring the act of chasing or catching a chicken to actually eating it.



When compared to your younger, sleeker hens, older, heavier chickens are less agile in mobility and flight and less able to defend themselves from a predator. Some breeds, like the Polish breed, are at a definite disadvantage; their crested feathers that hang over their eyes give them less visibility than other breeds. Take the specific abilities of your chickens into consideration when you free-range them.

Predator types vary regionally, being more common in certain geographical areas than others. If, for example, you recently moved to Florida from Maine, and started raising chickens, you may not be aware that alligators are a threat to chickens. Be aware of which predators are common in your area.

Predators also attack chickens differently, and can be a clue of what kind of culprit you are dealing with. For instance, foxes prefer to kill one chicken at a time, returning to a flock some time later for another. Dogs, on the other hand, will kill as many chickens at one time as they have access to.



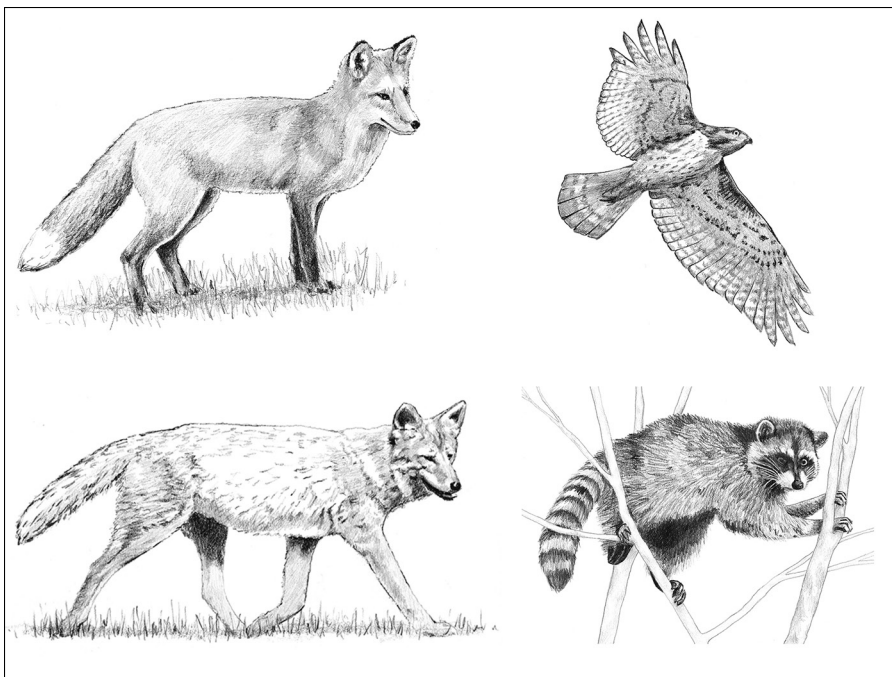
Predators that prefer chicken eggs to chickens themselves are opossums, skunks, rats, and snakes. Help these egg-loving animals avoid temptation by collecting your eggs on a regular basis.

Common predators

The following sections give you a closer look at some of the more common predators of chickens. Keep in mind predators can vary greatly from one region to another. Here are typically the most common predators across a wide range of geographical regions. Figure 10-3 shows four of the major predators of chickens.

Figure 10-3:

Keep watch for these four common chicken predators: fox, red-tailed hawk, coyote, and raccoon.



Domestic dogs

Dogs are a very real predator threat to chickens based on their sheer numbers alone. In many cases, they are a family pet or living in the neighborhood. They have easy access to chickens from their familiarity, ability to scale a fence, and chances of finding a property or garden open. A sturdy perimeter fence goes a long way in keeping dogs out, and away from your chickens.

The subject of domestic dogs and chickens is a tricky topic. Not all dogs are predators of chickens. Some dogs share a garden and are totally comfortable with free-range chickens. They're happy to guard their family's chickens from any intruders.



One of the best defenses against predators is a strong perimeter fence around your property.

You can usually tell right away whether a dog is or isn't interested in your chickens. We talk about dogs as friends or foes in Chapter 3. Lots of variables determine how dogs react toward chickens. Some of these variables are how they were raised, whether they were trained, whether they were a rescue dog, whether they have an aggressive nature, whether they were abused, whether they were raised with chickens when they were puppies, and more.



Some family dogs are fine with the family's flock until one day something sets them off or their instinct kicks in and they end up killing the chickens. This scenario isn't as uncommon as you think.

Dogs usually chase and roughhouse chickens, either shaking them and breaking their necks or chasing them into danger. Dogs don't really kill chickens for food, but more for the chase. Dogs as predators leave a big mess of feathers, sometimes blood, and deep puncture marks in a chicken's body. Dogs can pick up a dead chicken and take it to another yard or spot, or discard it where it was killed.



Dogs that are predators can come in all sizes and shapes. They're usually dogs that live close by. When a dog gets a taste of killing chickens, it will continue. If you know the dog's owner, and hopefully it isn't your favorite neighbor, you can report the incident to animal control and let them take care of the matter. Usually a dog's owner is responsible for any damages.

Raccoons

Raccoons are a real threat to chickens. They're found throughout the United States in urban and rural settings. Raccoons are active at night, and they don't necessarily need to live near water. Raccoons eat chickens and eggs. Raccoons usually kill several chickens at once, and are ruthless in tearing chickens apart. They can carry diseases such as rabies and parasites.

Raccoons are cunning when accessing chickens. They have the ability to scale fences, open chicken coop doors, and tear through chicken wire. (Chicken wire is a chicken-resistant solution to protect plants, and not a viable material to protect chickens from predators.)



Raccoons are one common predator that can reach your chickens if you're delayed in closing your chicken coop door for the evening. Take precaution to use clip latches with spring loaded locking mechanisms, or even padlocks on chicken doors, versus hook and eye latches or slide bolts. Use quarter-inch wire mesh over chicken coop windows further secured with iron bars. Use half-inch wire hardware cloth on a wood or metal frame on all sides for an outside pen. Raccoons have been known to open unlocked sliding glass doors to reach a parakeet in a cage. They are extremely cunning with amazing dexterity.

Coyotes

Coyotes are the size of a small dog and can run in packs or as lone animals. They're nocturnal mainly, but can be seen in early morning hours, during the day, and at dusk. The distinctive noise of coyotes killing at night is chilling. Coyotes used to be found in rural areas, but have adapted to more urban neighborhoods as urban development has eliminated their habitat. They can feed on rabbits, domestic cats, small dogs, and chickens. Coyotes

scale fences, and they've been known to violently break into a chicken coop. Coyotes try and break into secure outside pens and chicken coops as well as surprise attack free-ranging chickens. Coyotes eat chickens and can eat their eggs.

The coyote roller bar is an excellent defense to use on a perimeter fence surrounding your property, and deterring coyotes access onto your property.

Your trusted guard dog can bark and alert you of coyotes. Coyotes hunt at night, but also at dusk and dawn hours. Another reason to have your chickens safely in the coop at dusk.

Foxes

Foxes are found throughout most of North America, mainly in rural areas. They hunt mainly late in the evening and during early morning hours. Foxes will enter a chicken coop if the door is open after dark, and can dig to access a coop. They can also prey on free-ranging chickens. Foxes generally kill a single chicken, carrying it away to eat it. After a fox finds a vulnerable chicken coop or flock, it will repeatedly return and kill.

If you have a fox problem, stop free-ranging your chickens entirely.

Birds of prey

Also called *raptors*, birds of prey can be a serious predator problem to chickens. They have the advantage of aerial assault, sky visibility, and keen eyesight to help them hunt. The best offense in protecting chickens from birds of prey is to avoid pure white chicken breeds, provide a layered garden structure and landscape for limited visibility, and to screen the tops of outside pens. The red-tailed hawk is one of the common birds of prey known to attack and kill chickens.

In some cases, larger, heavier chicken breeds can sometimes fend off a hawk, while smaller, more delicate breeds can't. However, birds of prey should be taken seriously as potential chicken predators.

Birds of prey, such as hawks, owls, and eagles are justly protected by federal law in the U.S. The Migratory Bird Treaty Act makes it illegal to harm or kill them. If you have these raptors in your neighborhood, they're great rodent hunters and should be considered part of your delicate wildlife ecosystem.

Owls are nocturnal hunters mainly, and they prefer rodents as their favorite food. A pair of owls can consume as many as 3,000 rodents in a breeding season. Owls are more likely to hunt chickens that are outside at night. We have heard of instances where small owls frequent a chicken coop for its abundant supply of mice, leaving the chickens alone.

Minks and weasels

Minks and weasels are usually rural predators that like a close water source. They're active during the day as well as at night. They shun human activity, so it may be difficult to see or trap them. Their favorite food is rodents, and they can be effective in keeping rodent populations down. However, they will eat chickens and their eggs, too. Minks and weasels prefer to bite off the heads of chickens, and kill more chickens than they can eat at one time. They're sly creatures that can squeeze into mouse tunnels and holes to enter a chicken coop.

Minks and weasels are best trapped and relocated to a wildlife habitat. Hire a professional to trap, or call the state wildlife agency for further help. Wildlife agencies are more inclined to help with larger predators like bears, bobcats. Research volunteer organizations in your area that rescue injured wildlife and/or try to relocate wildlife.

Snakes

Snakes can be a chicken predator, and prey on chicks and eggs, too. Chickens have been known to eat small snakes, similar to their ability to eat whole mice. Be cautious of larger exotic snakes and some species of rattlesnakes, like cottonmouth and copperheads. It's wise to know the snakes that can potentially kill and eat chickens in your area.

Snakes can be beneficial in a garden environment, like an owl eating its share of rats and mice. Like minks and weasels, snakes can follow rodent tunnels and holes into and out of chicken coops for the pursuit of food. Keep your chicken coop and secure outside pen in order with no holes and access.

Domestic cats

Although domestic cats are generally not considered a predator and threat for your chickens, there is always the exception. Be very cautious when acclimating your domestic cat with your chickens. Usually a domestic cat in a garden is more interested in hunting mice or other rodents. Domestic cats can be more tempted by chicks, so ensure chicks are raised in a safe and protected shelter away from your domestic cat. Be aware that feral cats can be considered a chicken predator, especially if there is a problem with feral cats close to where you live.

Uncommon predators

Depending on where you live, you may find yourself faced with some pretty tough predators.



Report any problems with large predators to the proper authorities, such as police, animal control, and state wildlife agencies. Don't tackle a large predator problem on your own. Hire trusted professionals that are experienced and knowledgeable with these animals.

Alligators

Alligators are found in parts of the southern U.S., particularly near marshlands and waterways. Alligators are very dangerous and unpredictable. They can eat chickens, as well as other small animals.

Bears

Bears are found throughout the U.S., and have become comfortable moving into populated areas to find easy food. They have a keen sense of smell, and can destroy a chicken coop or secure outside pen to reach chickens. Bears are dangerous to you, your family, and other livestock.

Bobcats and cougars

Bobcats and cougars can be found in rural areas, and in urban areas that adjoin canyons and wilderness areas. They can eradicate a whole flock of chickens, either while they're free-ranging or by breaking into a coop or secure outside pen. Bobcats and cougars can be dangerous to your family, pets, and other livestock.

Dealing with Diseases and Parasites

If you practice good management with your chickens and your chicken coop in regard to cleanliness, manure management, pest control, and parasite control, you're going to have happy healthy chickens that thrive and flourish. Good management practices go a long way toward keeping your chicken flock healthy.

Poultry diseases are usually transferred by human contact — people traveling from flock to flock — rather than by chickens themselves contacting other birds. Take extreme caution when visiting other people's flocks, commercial poultry operations, small farms, events like 4H, and poultry shows. You could be potentially bringing contagious diseases home to your flock. Shower, change your clothes, and clean and disinfect your shoes after these kinds of visits or events.

Wildlife — such as birds, rats, mice, raccoons, opossums, and even insects — can be carriers and transmit disease to your chickens. One more case for keeping your chicken coop and storage area clean and uncluttered to deter these uninvited guests.

Chickens are rather surprisingly durable and resilient. We cover the basics of raising a healthy chicken flock in Chapter 2. Once again, the four key components for healthy chickens are a clean shelter, protection, balanced healthy food, and fresh clean water in a non-stressful, clean environment.

Research a veterinarian in your area who specializes in birds, and poultry in particular, who you can call if something appears to be wrong with your chickens.

Here are some red flags that indicate your chickens may be sick:

- ✓ Inactivity. Isolation from the rest of the flock. Not able to roost at night.
- ✓ Chicken closes its eyes and appears to be strained or wobbly.
- ✓ Comb and wattles around their head are pale, dull. Comb may be bent over rather than upright.
- ✓ Skin has a yellow, jaundice tone to it.
- ✓ Manure is abnormal with blood, or an off color.
- ✓ Pasted feathers around their vent and down their feathers.



The *vent* is the hen's opening where the egg emerges from her body. Just inside the vent is a hen's *cloaca*, where the hen's reproductive and excretory two tracts meet. A hen lays an egg and poops out of the same opening, but not at the same time. When an egg is being laid, a part of her oviduct, the part of a hen's body where an egg is formed, turns inside out — keeping the egg clean as it is laid and sealing off the excretory or waste passage of the hen.

- ✓ It has stopped eating and drinking.
- ✓ It has stopped laying.
- ✓ Feathers are puffed up for an extended period of time, the opposite of lying down nicely.
- ✓ Eyes are listless, abnormal in appearance.
- ✓ Wheezing or coughing.
- ✓ Any discharge coming from eyes or nose.

Chickens are very active and always on the go, exploring, searching for food, and interacting socially with each other. Be observant with your chickens every day, so that if something appears to be wrong, you can seek help immediately.

Common chicken diseases

Chicken health and diseases is a large subject — too large to cover fully in this book. For more comprehensive information, we suggest you read *Chicken Health For Dummies* by Julie Gauthier and Rob Ludlow (Wiley). In the meantime, we provide you with a short list of basic chicken diseases.

Diseases in chickens are usually one of four types:

- ✓ Caused by viruses. Examples include:
 - Newcastle disease
 - Gumboro disease
 - Avian influenza
 - Mareks disease
- ✓ Caused by bacteria. Examples include:
 - Fowl cholera
 - Salmonella
 - E. coli
 - Mycoplasma
- ✓ Caused by fungi. Examples include:
 - Thrush or also called moniliasis
 - Mycotoxins
- ✓ Caused by protozoa or parasites. Examples include:
 - Coccidiosis
 - Intestinal worms
 - Lice
 - Mites

The scoop on salmonella

The likelihood of contracting salmonella from your free-ranging chickens is slim to nonexistent. We do want to emphasize a few important points about salmonella. This common bacterium comes from feces of infected birds or other animals that outwardly may not look sick. Salmonella outbreaks, which have reached national news, are usually from large commercial poultry operations or large-scale commercialized agriculture operations.

Young children under 5, and people with challenged immune systems should not handle poultry.

In Chapter 3, we caution you on who should not be handling poultry, and the need to wash your hands always after handling poultry, for risk of salmonella.

Most poultry diseases break out in larger commercial operations where there are mass numbers of chickens, cleanliness has been compromised, or a flock was unintentionally exposed by human carriers.

A small backyard flock is highly unlikely to contract the poultry diseases previously mentioned. If your chickens did contract these diseases, you wouldn't be able to correctly diagnose the disease. Leave the diagnosis and treatment to professional veterinarians, and seek help immediately.

Keeping yourself disease-free

It's important to keep your low garden edibles, as in a vegetable garden, fenced off from free-ranging chickens. Doing so avoids any possibility of your chickens having salmonella and leaving fresh, infected manure around your edibles. Always double wash any edibles coming from your garden.

Practice good poultry management, as we indicate throughout this book, and safe food management. Keep your chicken coop clean and well managed, your hens healthy, happy, and free from rodents and pests. Keep a pair of dedicated shoes for the sole purpose of cleaning the chicken coop, collecting eggs, and taking care of your flock. Keep these shoes out of your home, and in some place such as a garage or storage shed.

Always wash your hands after handling your chickens, manure, and compost. Wash children's hands after handling poultry, and do not let them kiss or put poultry near their face and mouth.

Collect and store your eggs properly. Eggs should be stored in a carton, point end down in the coldest part of your refrigerator, at least below 45 degrees Fahrenheit. It is best to use your properly collected and eggs stored in a refrigerator within a month.

Never leave an egg from the refrigerator at room temperature more than two hours. If eggs have been left out accidentally overnight, do not use or eat them. Eggs that have been cooled in a refrigerator, begin to sweat at room temperature. This sweating is a medium for bacteria to start. Never eat an egg that's cracked or broken, or that looks unusual, because cracks can allow bacteria to enter an egg.

Don't eat raw eggs, even though the eggs come from your own eggs in your own backyard. Salmonella can be present in raw eggs (inside the egg and/or on the outside shell), in undercooked eggs, or in foods in which salmonella-tainted eggs were used. Egg whites and whole eggs should be cooked to at least 144 degrees Fahrenheit and egg yolks should be cooked to at least 149 degrees Fahrenheit.

Pasteurization is the process of using heat to destroy bacteria and viruses. In-shell eggs can be pasteurized, and are available on the market in some areas of the country, as is liquid eggs. Most in-shell eggs available today, are not pasteurized and have a safe handling statement regarding salmonella. All egg products by law, have to be pasteurized.

Common chicken parasites

This section includes protozoa and parasites. They're probably the only type of poultry disease you may detect in your personal chicken flock, and that you can be proactive in preventing and/or treating.

Internal parasites

Chickens are great foragers and scavengers for their food and natural diet, but this ability leaves them open to picking up internal and external parasites. *Internal parasites* include worms and protozoa that live mainly in chickens' digestive tracts but can enter other parts of their bodies. On rare occasions, a heavily infested hen may lay an egg with a worm in it.

Look for abnormal external appearances in your chickens; in particular, pay attention to a chicken's feces and vent area. If feces are runny, pasty, or look like diarrhea, it can be a sign of worms. Chickens may have a rundown appearance, lay fewer eggs, and eat more feed. On the other hand, you may not see any telltale signs of a worm infestation with your chickens. In some cases, you can see worms in the feces, but not always. If you suspect your chickens have worms, take a feces sample to your veterinarian for definitive answers.

Here's a list of internal parasites that can affect your chickens:

- ✔ **Roundworms:** They're a common parasite in chickens. Chickens pick up roundworm eggs while free-ranging for food. Roundworm eggs pass through chickens' digestive systems and eventually hatch in their intestines. Roundworm eggs are resilient to disinfectants, and are hard to get rid of. Roundworms can pass through a chicken's feces. They look like three-inch strings, and sometimes can be seen moving.
- ✔ **Tapeworms:** Tapeworms are another common parasitic worm found in chickens that free-range. Chickens that have tapeworms may eat more, because they're sharing their food with tapeworms. Tapeworms need an intermediate host, such as snails, slugs, earthworms, and some insects like grasshoppers. Chickens eat the intermediate host, which carry larvae tapeworms and end up in the chicken's intestines to mature and lay eggs. Tapeworms and their eggs can be expelled in a chicken's feces. Tapeworms look like small, flat, rectangular, moving pieces. Consult a veterinarian for worming chickens thought to have tapeworms.

✔ **Gapeworm:** This type of parasitic worm that's harmful to chickens is also picked up through free-ranging. Gapeworms need a host, attaching to a chicken's windpipe. An infected chicken opens its mouth and gasps, shakes its head, and coughs while trying to breathe more air. Each female worm has a male worm permanently attached to it. Gapeworm is very serious in chickens, slowly suffocating them and bringing their general health down.

Gapeworms, like tapeworms, require an intermediate host, such as snails, earthworms, or slugs. When chickens eat these intermediate hosts, they become infected. Gapeworms can be successfully treated. Like tapeworms, there are no registered gapeworm products for chickens, and a veterinarian should be consulted for specific products and dosage to use.

✔ **Coccidiosis:** This protozoa parasite resides in the intestines of chickens and inhibits nutrient absorption. Chickens are exposed to coccidiosis by eating oocysts, the immature coccidian that are passed through in feces. Oocysts are very stubborn and can survive up to one year, contaminating soil, feed, litter, and what it comes in contact with. Wild birds, rats, and infected chickens can spread coccidiosis.

Infected birds may appear to be in poor health, and they may have loose, watery, and sometimes bloody feces. Coccidiosis outbreak may start as a result of damp, dirty, and overcrowded housing conditions. It particularly affects young birds that are three to six weeks old. Coccidiosis can be controlled with drugs and a reversal of poor management practices. Consult a veterinarian for guidance.

To prevent worms, start a worming program at about 18 weeks of age, and follow through at least twice a year. We suggest worming your flock with natural dewormers versus chemical dewormers. If using natural dewormers, you can still eat your hen's eggs.

If you choose to use chemical dewormers, consult with your poultry veterinarian or local feed store first, as a chemical dewormer must be indicated safe for egg-laying hens on the label/directions. Follow directions carefully and do not ingest eggs laid following the treatment for a specific time period.

Food Grade Diatomaceous Earth is a preventive internal dewormer when added to chicken feed, and can be used externally for ridding lice and mites when added to nesting boxes and dust bath areas. See below. Grow medicinal herbs and plants in your garden which have vermifuge properties, plants known to have medicinal qualities that expel parasitic worms. One of the best organic treatment for worms is adding crushed garlic cloves in waterers. Nasturtium leaves and seeds are also considered good dewormers (see Chapter 6 for more info).

Food-grade diatomaceous earth

Food-grade diatomaceous earth is being marketed today as a holistic preventative dewormer for poultry mixed with their feed, and as an organic external dusting powder for all birds to combat fleas, lice, and mites. Always follow directions.

Food-grade diatomaceous earth is a natural dust consisting of tiny fossilized phytoplankton that can cut and shred parasites with their razor

sharp edges. Use the food-grade diatomaceous earth as a dusting powder directly on your birds, and in dust bath locations.

This very fine dust can be harmful to your lungs. Use a dust mask, gloves, and protective clothing when handling food-grade diatomaceous earth. Avoid exposure around young children and other pets.

External parasites

External parasites are parasites found on the external part of a chicken. External parasites feed on the blood or feathers of a chicken. External parasites can be visible on a chicken or can be hidden. External parasites can lower the level of general health in a chicken, and in some cases cause death. Wild birds, rodents, and new chickens joining your flock can introduce external parasites. Always look over new chickens carefully, and quarantine them for a minimum of one month. In cases, where introducing new chickens to a flock causes intense fighting, new chickens might have to be quarantined for longer than a month and acclimated more slowly with the flock.

Signs of external parasites can include raised leg scales, scratching, and continually raised feathers. External parasites tend to congregate in areas that chickens can't reach easily, including around their eyes, vents, and under leg scales. At the first sign of external parasites, treat the chicken immediately, because the rest of your flock can be affected quickly.

Giving your free-ranging chickens the opportunity to have their dust baths goes a long way in cleansing themselves naturally and deters parasites.

The most common external parasites are:

- ✓ **Lice:** Lice feed on chicken feathers and dead skin cells. Lice can't live long when they're removed from their host (in this case, a chicken). In heavily infested cases, you can actually see the lice moving around a chicken's body.

✔ **Mites:** Mites like to suck the blood of chickens, and some varieties like to eat feathers. These external parasites come in different sizes, some being microscopic. Evidence of mites on your chickens might look like excessive scratching, bare patches of skin, and irregular feathers. There are three types of mites: Northern Fowl mite, common chicken mite, and scaly leg mite. Northern fowl mite remains on chickens throughout its life causing discomfort for the chicken, rough skin, and anemia. The common chicken mite feeds on chickens at night, and lives its days in cracks around the coop.

Treatment for external parasites, lice and mites, consists of physically dusting each infected chicken with a poultry dusting powder, usually a carbaryl dust, permethrin (a synthetic version of pyrethrum), or some form of a natural pyrethrum, such as feverfew. If your chickens have lice or mites, it is best to consult your poultry veterinarian for the best method of treatment.

When mites are near delicate areas, such as a chicken's eye, use a clean, dusted cotton swab to gently dab around the chicken's eye area. Follow up with repeated dustings until the mites have gone. Always use gloves, dust mask, and protective clothing when dusting chickens.



Feverfew, *Tanacetum parthenium*, a medicinal herb we mention in Chapter 6, can be used as an insecticide because it has pyrethrum properties, or natural insect repellent properties. Including plants with insect repellent properties, such as lavender, rosemary, and feverfew, around a chicken coop is beneficial.

Thoroughly clean your chicken coop when chickens have been infested with lice and mites. Remove all bedding, dust, and dirt as much as possible. Scrub down the whole coop with a safe product such as Orange Guard, www.orange-guard.com (the site contains a store locator tool). Follow the directions on the container. Manna Pro has an all natural product called Poultry Protector, <http://www.mannapro.com/products/poultry/poultry-protector/>, for use in external parasites.

Scaly leg mite

Scaly leg mite is a particularly menacing mite that gets under and weakens the scales on chickens' legs. Chickens can actually lose their scales, which are the protective armor of their legs. In some cases, these mites are so horrific that they cause chickens to lose their toes. Treatment for scaly leg mites is discipline

in dipping daily your chickens' legs and feet in mineral oil or petroleum jelly that smother the mites. This treatment is often messy, and scaly leg mites are painstakingly slow to treat. Consult your veterinarian if you think your chickens have scaly leg mites.

Dealing with Unexpected Chicken Injuries

Chickens are mighty little warriors in the garden, yet at the same time they're delicate creatures. Keeping your chicken garden safe for your chickens goes a long way toward keeping them healthy.

Use common sense in picking up any broken glass or sharp objects that could harm chickens.



A cut or infection in a chicken's foot pad can quickly escalate into bumblefoot. *Bumblefoot* is a bacterial infection or abscess of the chicken foot. Consult immediately with a poultry veterinarian, and do not try and treat this yourself. If not treated immediately, a chicken might have to be put down.

A chicken that loses mobility with a leg or foot injury quickly loses spirit, the will to eat and drink, and spirals downward from there.

Teach everyone caring for your chickens how to handle them properly. Train your chickens to come to you so you don't have to chase them down, risking hurting their legs and feet.

Teach everyone caring for your chickens how to hold them securely and safely so they aren't suddenly dropped, or harmed while trying to free themselves.

Even with precautions, injuries can happen to your chickens. When an injury occurs, immediately care for your chicken, and isolate it from the others. Except for the very basic cut or scrape that you can clean and take care of, it's important to get your injured chicken to your veterinarian to fend off infection and further complications. Be aware that medications are passed through eggs; dispose of your chicken's eggs until the appropriate time has passed, on the advice of your veterinarian.

A few medical supplies to have on hand for your chickens:

- ✓ Dedicated clean container, to hold clean warm water and a drop of dish soap.
- ✓ Clean cotton pads, cotton swabs, and self-adhering bandages.
- ✓ An antibiotic ointment for animal use.
- ✓ Styptic powder, which stops bleeding, for animal use. Cornstarch from the kitchen will work too.

- ✓ Hydrogen peroxide three percent, that's diluted 50 percent. Great for cleaning a wound as an antiseptic. For external use only. Don't put it in a chicken's eyes.
- ✓ Towel to wrap and calm a chicken.
- ✓ Ready to transport box.
- ✓ Veterinarian phone number.

Coping with Old Age and Death

Chickens that are well cared for can enjoy a long life. The average chicken life span is five to seven years in a perfect world. There are always the truly exceptional tales of chickens living past ten years, which speaks highly for those breeds and the people who have cared for them.

In Chapter 9, we talk about what to expect as chickens mature and move through their lifespan. If your chickens have been family pets, it's hard to see them stop laying and become less mobile. They'll continue to be beneficial for weed and pest control in your garden. Older hens are good at showing younger birds the ropes, both within the flock and out in the garden. Older chickens may need more care and consideration as time goes by.

Whether a chicken dies from old age, an injury, or a predator, it's always sad. If you suspect the death is from a disease, or if the cause is unknown, it's a good idea to have a *necropsy*, an animal autopsy done, and to ask your veterinarian for advice. If you have children, take time to discuss and explain situations like this one, because it's another life lesson that children can learn from chickens.



Many states offer public service programs associated with universities for high-quality diagnostic laboratory support. Avian and livestock carcasses may be submitted to these labs for a necropsy as well as other services. In California, a public service program of UC Davis is the California Animal Health and Food Safety Laboratory, www.cahfs.ucdavis.edu. For California residents, this service is covered by the State of California and there is no charge for an avian necropsy. Simply print a standard submission form from their website and mail your chicken's carcass to them. The lab contacts you with their findings.

If the cause was old age or a predator, bury your chicken in a nice quiet spot in the garden where your chicken enjoyed relaxing. Bury your chicken deep enough that dogs or other animals aren't going to dig it up. If your chicken died from a predator attack, try to find out how, why, and where the attack happened to protect the rest of your flock.

Part IV

The Part of Tens



Check out www.dummies.com/extras/gardeningwithfreerange chickens for bonus content, including a list of ten ways composting benefits your soil.

In this part . . .

- ✓ I have rodents! What to do with all this manure? How can I get enough shade? We teach you ways to solve these problems and more.
- ✓ We give you a list of the best tools to have on hand to help in the garden and with managing your chickens.
- ✓ Gardening and chickens give you the opportunity to express yourself in so many different ways, from decorating your coop to picking cool breeds to creating your own egg cartons. We show you how to do it all.

Chapter 11

Ten Common Chicken Problems Solved

In This Chapter

- ▶ Considering helpful solutions for common chicken problems
 - ▶ Keeping your chicken coop clean
 - ▶ Storing and protecting costly feed
-

Chickens can be a great addition to your garden and your life. They provide natural fertilizer, weed and pest control, aeration, and tasty eggs. If you're new to chickens, you may encounter some common problems that come with raising chickens. In this chapter we offer some suggestions for solving those problems.

Discouraging Rodents

Where there are chickens, there are rodents. Rodents are drawn to what they consider their pot o' gold — the feed bucket. If you think you don't have rodents, take a visit to your chicken coop around midnight and multiply what you see by ten. The most common rodents are mice and rats. Chickens will eat mice, if given an opportunity. Rodents eat feed, and in some cases rats can eat chicks and chickens that are roosting on the floor. Rodents also carry diseases and parasites, which your chickens can pick up. Rodents can start chewing your chicken coop, and they can create tunnels to your chicken coop. These tunnels also become access for some predators, such as small snakes, mink, weasels, and ferrets.

Chickens don't eat in the dark, so store your feed out of the chicken coop every night in a secure shed or building. Use a clean metal container like a garbage can. Feed can be left in original bags they come in, within a metal

container, or feed can be poured directly into a clean metal can for more room. One standard metal storage container will hold approximately 100 pounds of feed. Remember rodents can chew through wood and plastic storage bins easily.

Poison is a common method of rodent control. Different kinds of poison can be purchased at local garden centers, home improvement businesses, and feed stores. Use the type of poison that is contained in a rodent bait box, so that other animals can't access the poison. Be extremely careful not to poison your own pets or chickens. Immediately bury or dispose of any dead rodent(s) you find, so it will not be accidentally eaten. If you do not want to take on your own rodent control, there are local businesses that specialize in rodent control that you can hire.

Although we talk about owls as being predators for chickens, a pair of breeding owls can consume up to 3,000 rodents a year. Installing an owl box to attract owls is an organic sustainable approach to tackling rodent problems. Owls are nocturnal, and chickens are safe inside the coop at night. This might be a possible solution to consider, especially on a large property.

The best rodent control is prevention. Keep the area around your chicken coop, compost pile, and garden free of spilled feed, weeds, garbage, piles of wood, and junk. If you keep this area tidy, you lessen the chance of rodents taking up residence and nesting.

Taking Care of the Poop

A manure box is invaluable in your chicken coop. It's similar in concept to a cat's litter box. Chickens roost above their manure box every night, dropping their manure below.

You can customize a manure box to your chicken coop and measurements. It's a shallow wood or plastic box with half-inch wire hardware cloth framed lid over it; this wire lid is removable. The wire mesh lid is removable. Place your bedding inside your manure box. Some of your chickens' manure will fall through the lid to inside the manure box, and some of the manure will remain on top of the screen lid.

Cleaning the accumulated manure each morning is easy. Simply skim the top wire lid, and inside the manure box, and put the manure in your muck bucket for the compost pile. Your chickens' manure is mixed with a little bedding, which is a great natural combination for the compost pile.

A manure box is very convenient to collect your chickens' manure over the night. A simple plastic board under the roosting bar will work, too. Skim off manure the same way the manure lid is skimmed and take it to the compost pile.

Spending Less on Bedding

There are many different types of bedding materials that can be used for a chicken coop. It is an individual choice usually based on what works best for you and what is conveniently available in your area. If you use cedar shavings, be aware that although this bedding material has great insect-repellent qualities, it also releases strong organic compounds from its oils. These organic compounds can compromise chicks and chickens housed with this bedding in small quarters and with poor ventilation. It is important to use bedding that will break down and compost easily.

If you use an easy rotating system within your chicken coop, you can extend the use of your bedding, which keeps costs down. Your cleanest bedding goes first in your nesting boxes. Start by emptying your nesting boxes, and put bedding from your nesting boxes on the chicken coop floor. As you clean out your manure box with soiled bedding, replenish your manure box with bedding from your chicken coop floor. When cleaning your manure box, skim the manure and soiled bedding to put in the compost pile.

If you use this rotation — nesting boxes, to chicken coop floor, to manure box, to compost pile — you're getting the most out of your bedding.

Worming Your Chickens Regularly

Family pets need to be monitored for worms, and so do chickens. If chickens are free-ranging, they're even more likely to eat intermediate hosts such as earthworms and snails that have parasitic larvae, and parasite eggs that mature into parasitic worms. Check your chickens' feces for what look like white strings or flat rectangular pieces. However, your chickens can have worms that aren't detectable in their feces. A sign of worms might be a runny bottom, down the back feathers under the vent, or where a hen lays her eggs. A runny bottom can mean a sign of illness, too. If your chickens are healthy, most likely worms are present.

We recommend worming your chickens when they reach 18 weeks of age. Following up with a regular worming schedule, once in the spring and once in the fall, is a good practice.

In Chapter 6, we discuss natural methods of deworming chickens, such as adding crushed garlic cloves to the waterer. Preventative worming methods also include food-grade diatomaceous earth added to feed, and feeding plants that have vermifuge properties such as nasturtium leaves and seeds and nettle.

If you choose to use chemical dewormers, consult with your poultry veterinarian or local feed store first, as a chemical dewormer must be indicated safe for egg-laying hens on the label/directions. Follow directions carefully and do not ingest eggs laid following the treatment for the recommended time period specified.

Denying Predators Access through Windows

Chickens need windows in their chicken coop for air circulation, seeing out, and sunlight. Windows in a chicken coop can be a vulnerable part of a chicken coop to predators, if they aren't sufficiently reinforced.

Don't use chicken wire for protecting your chickens. Many predators such as raccoons can rip open chicken wire. Chicken wire is best used as a protection around plants, and as temporary fencing. Quarter-inch wire hardware cloth is a much stronger, sturdier, and protective screening material to use over chicken coop windows. Use half-inch wire hardware cloth for other areas like framed outside pens. For the best protection across chicken coop windows, use quarter-inch wire hardware cloth, reinforced with vertical metal rods spaced six inches apart to thwart larger predators. See Chapter 5, for an example of quarter-inch hardware wire cloth.

Getting a Rooster by Mistake

It isn't easy to determine the sex of day-old chicks, although hatcheries and feed stores do a good job. If you're getting a number of chicks, you may end up with a rooster in the mix. Most feed stores have a policy of taking back roosters that were purchased from them.

If you have a rooster that you accidentally purchased from a feed store, call the store first, and arrange for the store to take the rooster back. Other options are contacting small local artisanal farms or 4H leaders in your area, researching and contacting specific poultry breeders in your area, posting on Craigslist, or joining forums such as www.backyardchickens.com (coauthor Rob's website).

Watching Out for Wet Areas

Chickens don't do well with dampness and continual wet areas in their chicken coop and out in the garden. Damp conditions can lead to disease and illness in your flock. Wet areas make for muddy areas, and harbor insect propagation such as flies and mosquitoes.

If you have a wet spot in your garden, take steps to correct the situation either by putting in a drain for better drainage, building up the soil level, property grading, incorporating hardscape options, or fencing your chicken flock out of that area. In Chapter 6, we give some landscape suggestions that thrive in wet and damp areas.

Protecting Your Feed

Chicken feed is going to be your biggest ongoing cost in raising chickens. You want to provide your chickens feed that's in good condition at all times. Don't simply leave your chicken feed in its original bag. A feedbag isn't enough protection against dampness, bugs, rodents, and some chicken predators. Store feed in a clean metal container dedicated for chicken feed, and within a building or a storage shed where it's dry. Damp feed will turn rancid quickly, and attract small bugs, which chickens shouldn't eat. Your feed should be inaccessible to rodents. Rodents carry disease and parasites, can consume a lot of feed if given the opportunity, and will destroy more feed by further tainting it (see the earlier section "Discouraging Rodents" for more information).

Creating Enough Shade

If you aren't able to situate your chicken coop close to protective trees that shade, or plant other landscaping close by to shade, use shade cloth. Shade cloth is versatile and comes in long sheets of material. It's reasonably priced.

It even comes in different colors. You can purchase shade cloth at most nurseries and home improvement stores. Shade cloth blocks out the sun enough to give a chicken flock protection from the blazing summer sun. Shade cloth is equally protective for shade-loving plants in your garden. You can simply remove it when shade isn't necessary.

Shade cloth can cover a portion of a chicken coop and an adjoining secure outside pen. If you have situated your chicken coop around trees that shade, you have a natural shade situation.

Secure shade cloth on top of a run by stapling it to your outside pen framework, or placing something like 2" x 4" boards or manageable stones on the cloth to act as a weight.

Selecting the Right Chicken Breed

We discuss many different types of chicken breeds in Chapter 2. Aligning yourself with chicken breeds that match your environment, your intended purpose for raising chickens, and preferred qualities goes a long way in creating a rewarding experience with raising chickens. Chickens are a responsibility and a commitment of many years.

If you're interested in good egg layers, some of the best are Australorps, Rhode Island Reds, Black Star, and Hamburgs.

If you want blue-green eggs, consider Ameraucana, Araucana, and Easter Eggers.

If you live in an urban environment and have a small space for chickens, you may want to choose Silkie and Japanese bantam breeds that require a lot less space.



Silkies are a very popular breed amongst chicken enthusiasts, but not always the best choice for free-ranging because of their unique downy feathers that don't take wet and moisture well, and don't dry easily.

If you live on a farm, you may want to choose a hearty heritage breed that's a good forager, such as Buckeye and Barnevelder.

Chapter 12

Ten Beneficial Tools and Aids to Have

In This Chapter

- ▶ Using tools for composting
 - ▶ Considering tools that make a big difference when managing your flock
 - ▶ Making the most of handy tools to keep your chicken coop in order
-

After raising chickens over the years, we've found certain tools that are really helpful. They're usually everyday tools that don't cost an "arm and a leg."

In this chapter, we include tools that assist you in composting, tools that are helpful in feeding your chickens, tools that are great for cleaning a chicken coop, and tools for raising chicks.

Making Use of Two Types of Thermometers

Two types of thermometers that are good to have when owning chickens are the long-stemmed compost thermometer and a regular outdoor thermometer for measuring the internal coop temperature. This section covers tips on having both types at the ready.

In Chapter 1, we give details about how to start composting, different compost bin types, and the general recipe to follow. We talk about two types of composting — *active*, which actually heats up the compost pile, and *passive*, which is a longer process that allows the "green" and "brown" materials to break down on their own.

Mixing together “greens” and “browns,” adding moisture, and aerating causes beneficial microorganisms to heat this mixture and start decomposing these materials. The heat that’s created can reach 120 to 140 degrees Fahrenheit. With the aid of a long-stemmed compost thermometer, you can easily check the temperature of your composting. You simply plunge the long-stemmed thermometer into the center of your compost pile for a temperature reading. The higher the temperature of your compost pile, the better. You want your compost to reach at least 130 degrees Fahrenheit to kill any weed seeds. Monitoring the temperature and heat of your compost pile helps you know whether your compost recipe is working, when the pile needs to be turned, when it has slowed down, and when it’s ready.

Active composting is heat, moisture, and aeration. When you turn over your compost pile, it continues to heat up and break down materials. Over time, your compost pile transitions to a rich dark humus, and it no longer heats up. All the materials have been “cooked.” Let your compost pile rest for a few weeks, and then mix it into your soil where you desire.

You can find compost thermometers for sale on the Internet. They have a temperature dial on top of a long heat-sensitive stem that’s usually 19 inches in length. Compost thermometers typically cost between \$25 and \$35. Gardener’s Supply carries compost thermometers.

As we mention in Chapter 2, chickens are adaptable to a range of climates and temperatures. We recommend that you place a small thermometer inside your chicken coop as another beneficial tool to help you manage your chickens. A thermometer comes in handy to keep you abreast of the temperatures your chickens are experiencing. Some thermometers even record the high and low for each day. The more comfortable you can keep your chickens, the healthier and happier they will be.

Keeping a vigilant eye on the thermometer helps you to determine whether you should keep a back door open or closed, prepare to heat the chicken coop, or check your flock’s water one more time. It may help you to understand why your chickens aren’t laying normally, or why they’re huddled together in a corner of their coop.

Blending Compost with a Pitchfork and Putting a Small Rake to Use

Having small tools on hand to help blend compost and rake up debris is a good idea. In this section, we discuss the benefits to having a pitchfork and small rake.

You may have a pitchfork in your garden tool repertoire already. A pitchfork is a great tool for blending and turning over your compost pile. A pitchfork is similar to a garden shovel, except that it has a base of five separated sharp prongs that can dig in and grab dense material. Keeping your prong points sharp is key. A sharp pitchfork easily grabs denser materials, such as root vegetable pieces, eggshells, and yard materials.

Properly cared for garden tools can last generations, and can be handed down from one generation to the next budding generation of gardeners. Here's an easy method to keep your pitchfork (and other garden tools) in good working order:

- ✓ Lightly sand your pitchfork wood handle. Apply a generous amount of linseed oil with a soft cloth, and rub. If the oil absorbs quickly, reapply. Your tool handle will become as soft as velvet and a real treat to work with.
- ✓ In a large bucket, mix equal parts clean sand and clean unused motor oil. Plunge your pitchfork's prong-end into this mixture, and let it sit. The sand and oil clean and lubricate your pitchfork prongs.



Your pitchfork is key to aerating a compost pile. Keep it handy near your composting area, because the more you use it, the faster your compost pile will break down. Store it in a nearby shed, and keep it out of the weather.

A small rake with a head size base of nine inches is handy for cleaning around the chicken coop and outside pen. It functions like a normal sized rake, but can get into small spaces and tight corners. These rakes are small, but if you find the rake handle is too tall and cumbersome, cut the handle down to your desired height, and sand down the cut edge. If you don't want to cut the handle of your rake, try looking for a child's rake which is a perfect size.

These small rakes are great for gathering displaced bedding, dropped feathers, random uneaten kitchen scraps, and things like dried pieces of chicken manure. You can also use this type of rake for leveling the floor of an outside pen.

Storing Feed in a Clean Metal Garbage Can

One of the easiest and most economical methods of storing your chicken feed is in a clean metal garbage can within a storage area. Unfortunately, plastic and wood materials aren't infallible against wildlife freeloaders. Chickens aren't the only ones who love their food. Rats and mice are certainly primary culprits, but wild birds and other wildlife can be attracted to chicken feed, too.

And they can potentially carry disease that you don't want to introduce to your chickens.

Your goal should be to provide your chickens with fresh, dry, clean feed. Other wildlife can chew through original feed bags and even plastic storage containers. These containers can also be subjected to moisture, which causes rancidity and undesirable bugs.

A clean metal garbage can easily hold two 50-pound bags of chicken feed. Wildlife can't easily gnaw or access feed stored in metal containers. Store this metal garbage container in a clean, dry storage area, ideally near your chicken coop.

Employing a Sturdy Scoop for the Feed Bucket

Raising chickens means you're going to be filling a lot of feed buckets over time, so make your scooping easier by finding a nice, sturdy, and generous metal scoop.

You can find scoops at agricultural supply businesses, feed stores, and even at flea markets. Using empty plastic food containers, such as yogurt or cottage cheese tubs, isn't ideal. Feed is heavy, and you want to make the chore of feeding your chickens easy. A sturdy scoop has a nice supporting handle with a gently curving end to direct feed into your bucket. You don't want to spill feed, which is wasteful and can attract rats and mice.

Making Sure Your Chickens are Secure with Locks

You're the guardian of your chickens, and you have to be on the offensive against the many types of predators that are attracted to your chickens. Many predators are cunning, ruthless, determined, and bold.

Make sure that every door and window can be secured, when needed, with hook-and-eye clips with a spring-loaded latching mechanism or some other type of secure locking mechanism. We also recommend installing steel poles and quarter-inch hardware cloth across windows for strength and security.

Raccoons are notorious for their dexterous paws that are skilled in opening chicken coops, and their ability of catching part of a chicken through a surprisingly small half-inch gap. Raccoons have the same dexterity and ability to figure out a lock as a two-year-old. If a two-year-old can figure out a lock so can a cunning predator.

Reinforce your door and windows with secure hardware. For extra precaution, use hooks and eyes that have a spring-loaded locking mechanism that is attached to the hook and locks the hook in the eye. Most of these hook and eye, padlocks, and other locking mechanisms can be purchased at local hardware and home improvement stores.

Handling Tight Areas with a Hand Brush and Dustpan

A small hand brush and dustpan is another great tool for cleaning around your chicken coop. Think of it as your “duster.” This hand brush is also a perfect size to get into tight areas and corners of your coop. It sweeps away cobwebs and dust. If you have quarter-inch or half-inch wire hardware cloth over your chicken coop windows, a hand brush is a great way to dust off the wire mesh.

A hand brush and dustpan are indispensable for cleaning nesting boxes, corners of the coop, and any spots where feathers, dust, and dirt accumulate. You may want to have a proprietary set for your chicken cleaning needs, and maybe a spare set, because they’re so handy and used all the time.

Protecting Yourself with Dust Masks



Always wear a dust mask when cleaning your chicken coop. Use the best possible mask you can purchase. Cleaning a chicken coop and outside pen stirs up incredible dust, dirt, and debris. A good mask keeps all the stirred-up debris in the air and out of your lungs. Make sure the mask fits securely over your face. It doesn’t hurt to wear a baseball cap, protection glasses, and gloves as well. The cleaner you keep your coop on a daily basis, the easier it is to thoroughly deep clean your coop at least twice a year, if not on a quarterly basis.

Raising Chicks by Using a Brooder Clamp Heater

Raising chicks is a large subject, one that's covered in depth in *Raising Chickens For Dummies* by Kimberley Willis and Rob Ludlow (Wiley). If you have the capability to raise chicks, you have more freedom to purchase uncommon chicken breeds.

Chicks need supplemental heat in the form of a brooder heater which maintains a temperature of 95 degrees Fahrenheit. Some brooders come with a clamp for attachment. It is wise to use a clamp, and a secondary measure such as a bungee cord or rope to keep the brooder heater securely in place. Chicks need supplemental heat for at least the first four to six weeks of their lives, and maybe longer depending on the season and temperatures. Young chicks need a cozy, dry, quiet, and protective environment to thrive and grow.

A brooder heater in a home environment is a great way to start your flock. Always be careful to use your brooder heater correctly, and securing it properly to prevent it from falling or starting a fire. Fires starting from a brooder heater are common and very dangerous. Always put safety first. As with any young living animal, you must take great care to closely observe and monitor your chicks for proper temperature, feed, and water.

We suggest a home brooder heater, and raising your own chicks because you have an incredible selection of many kinds of chicken breeds, the ability to bond with your flock quickly and early in their lives, and control over how they're raised and cared for.

Don't be daunted by raising chicks. It's rewarding and fascinating to see how quickly chicks transform themselves into free-ranging chickens in your garden.

Re-Purposing a Soft Baby Play Tent

When chicks are six weeks old and have their feathers, you can take them off their brooder heat. Chicks are curious and adventuresome. Put them in a soft baby play tent, and they'll be safe and happy. Make sure you put this baby play tent in a safe room, such as your garage, away from the family dog or curious cats. Remember, chicks at this age aren't ready for a yard or chicken coop with breezes, sun, and weather elements. This play tent is one of the best-kept secret tools for raising chicks.

You can place a soft baby play tent on a floor. It's totally enclosed with bottom, sides, and top. It has netting-like sides for air circulation. Chicks can see out, and you can see in to observe them. It's a nice size for a baker's dozen, which is 13 chicks. This play tent works well for more or less chickens in it. Remember chicks grow very fast, and will soon outgrow this soft baby play tent, the more chicks you have in it. This playpen is mobile and safe.

Before placing your soft baby playpen in a designated spot, you may want to put layers of newspaper down to cover the floor area, because sometimes bedding flies out onto the floor. Place a nice layer of bedding for your chicks in the bottom of the soft baby playpen. Add your chick starter food and water, and lastly your chicks.

Chicks can stay in this playpen until they outgrow it and are ready for their chicken coop. Chicks are usually fully feathered at six weeks of age to move into this type of playpen. They can stay in this playpen for another two to three weeks, before you acclimate them for outside and their chicken coop. This is also dependent on the time of year, and the region you live in. Cooler climates might mean leaving them longer in the soft baby playpen. Use common sense and your best judgment regarding moving them.

You can find soft baby play tents at garage sales, and stores like Goodwill and the Salvation Army. If you can't find a used one, look for new play tents in stores like Target and Walmart. You can usually find used ones around \$20 and new ones around \$35 and up.

Training Chickens with a Pet Clicker

In Chapter 9, we highlight how you can better manage your chickens through training and positive conditioning. The earlier you can start training your chickens the better.

A simple, inexpensive, plastic pet clicker with a metal tab is available at pet stores like Petco and PetSmart. These simple finger clickers make a distinctive noise and are an essential element for training your chickens. They can usually be heard from all over the garden. String yours on a piece of leather or ribbon, and put it around your neck for convenience.

Chapter 13

Ten Ways to Get Really Fancy

In This Chapter

- ▶ Packaging your eggs in fancy ways
 - ▶ Embellishing your chicken coop
 - ▶ Acquainting yourself with some rare chicken breeds
-

So you have a basic chicken coop set-up and an adorable chicken flock. What more could you want? How about making things a little fancier? Here are some creative ways to get a little fancier when raising chickens.

Customizing Egg Cartons

Store your eggs in pulp egg cartons that come in different colors. Try lime green, pink, blue, and brown. These cartons are so pretty they're begging to be given as gifts to family, friends, and neighbors. Pulp egg cartons are made from 100% recycled materials. Mypetchicken.com is one website source for these colorful egg cartons.

To go along with a bright egg carton, consider customizing egg carton labels. You can create custom egg carton labels that have a photo of your favorite hen, graphic design, and unique descriptions such as "Organic free-range" and "Produced by happy hens." Tie a pretty ribbon around the center of your egg carton, and it's a perfect hostess gift.

If you cook or have friends and family who are gourmet cooks, you may want a ceramic egg rack that's square-shaped and comes in 9-egg and 12-egg sizes. This egg rack is similar to the open egg flats that are used in restaurants, only much smaller.

Collecting Eggs in a Specialized Bucket

You can purchase a custom egg collecting bucket about the size of a golf ball basket that you'd use at the driving range. Lined in heavy-duty plastic to protect eggs from breaking and cracking, it easily holds around two dozen eggs. Everyone will fight over who gets to collect the daily eggs in a custom basket like this. Look for custom egg collecting buckets on the internet. One source is <http://www.mypetchicken.com/catalog/Egg-Baskets/Heavy-Duty-Egg-Basket-p652.aspx>.

Measuring Up with an Egg Scale

Chickens can teach children a great lesson in measuring eggs. Learning to grade eggs by size is fun and easy. The United States Department of Agriculture sets standards for eggs in six sizes from peewee (average weight of 1.25 ounces or 35 grams), the smallest, to jumbo (average weight of 2.5 ounces or 70 grams), the largest. Egg scales, modern or vintage are for sale on the Internet. Egg scales usually measure individual eggs as average weight per egg in ounces and grams. Follow the egg-size transition of your flock as they mature. Which of your hens continually lays the largest egg, or the double yolkers? Children will have fun charting which chickens are doing what.



A double yolker is two yolks inside one egg. It is usually caused by ovulation occurring too fast in a hen. Ovulation is the process of a yolk dropping from a laying hen's ovary into the funnel of her oviduct, starting the egg formation process. Sometimes double yolkers are an inherited trait in a hen. Double yolkers are fine to eat, and special because there are two yolks.

Going Digital with a Chicken Cam

You can install a chicken cam in your coop for fun, and stream the video to your computer. Check on your chickens when you're on vacation and someone is taking care of them for you, or whenever you want to see what's happening with your flock in your coop. Daytime/nighttime video cameras can be installed outside of your coop to monitor any predators that are lurking around your chicken coop at night, too.

Playing It Safe with an Automatic Door Opener

It's critical to get your chickens in your chicken coop before night falls, and with their chicken coop door securely closed. Chickens are *gallinaceous*, which means they're heavy, ground-related birds that remain near their home and come back each night to roost. Chickens innately return to their coop each night to sleep. Closing their coop door for the night is essential to their safety.

Research internet companies that sell automatic chicken doors with different features, and at reasonable prices. You can program your chicken coop door to close at a certain time each night, and to open at a certain time each morning to ensure your chickens are tucked in safely. These automatic doors can even be solar-powered or photosensitive.

There are several Internet websites which sell automatic door openers, here are two to look at: www.chickendoors.com, www.automaticchickencoopdoor.com.

Providing Water Automatically

If you have the means and capabilities to install automatic waterers for your chickens, it is something to consider. Automatic waterers save you time on filling your waterers day in and day out. You still, however, have to check your automatic waterers every day because they can become clogged. Make sure automatic waterers are cleaned daily, because bedding and dirt can get into them. Automatic waterers need to be piped to a household or property water system.

Piping can freeze in cold weather, so precautions have to be made to keep this from happening.

Installing a Small Door within a Door

It is helpful to have some flexibility managing your chickens within your coop. When building or creating your chicken coop, don't forget to include a human-size door for ease of egg collecting and cleaning your coop. That goes for the front of your chicken coop, and the outside back door that's seamless

into a secure outside pen. If you integrate a smaller door within the back door for your chickens, it provides more flexibility in cool days and more extreme weather. Your chickens can slip out to their outside pen in inclement weather, and not have the entire chicken coop open to the weather. This little door is a very helpful tool, but is often entirely overlooked. See a visual example of this small door in Chapter 2, Figure 2-1.

Adding a Green Roof

Try growing plants on your chicken coop roof. First, make sure your chicken coop roof slopes away from your outside pen, so when it rains, your outside pen isn't a muddy, smelly mess. If you have a large enough chicken coop, install a gutter and rain barrel for rainwater collection.

Easy basic steps to creating a green roof on your chicken coop are:

1. Create a framework to hold your soil and plants out of a moisture-resistant material such as plastic garden flats, molded chicken wire, and so on, that has drainage capabilities for rain and watering plants if necessary.
2. Place and secure a tarp or plastic lining the size of your plant framework on your chicken coop roof.
3. Secure your plant framework to your chicken coop roof, making sure not to create holes in your chicken coop roof.
4. Fill your plant framework with potting soil. If planting succulents, use cactus-specific soil.
5. Plant your plant framework with succulents, moss, or some type of forgiving, hardy, low-maintenance plant in your region.

A planted green roof can be beautiful, providing insulation for warmth in the winter, and a cooling effect in the summer.

Jazzing Up the Chicken Coop

When you have your chicken coop in place, you must not forget décor details. It doesn't matter what kind of chicken coop you build or create; it's always fun to add details. Chicken coops are usually small, charming structures that lend themselves to fanciful decorative touches in any style you prefer.



Anything you do, add, or expose your chickens to must be safe and chicken-friendly. Pay close attention to directions and labels. Avoid exposing your chickens to paint fumes, lead paint, chemicals, and anything toxic. The inside of a chicken coop doesn't necessarily need décor, painting, and so on. Fix any sharp edges or protruding nails inside your chicken coop. The more natural you can leave your chicken coop inside, the better it is for your chickens.

Here are a few of examples of chicken coop embellishments that can add to its charm, and your garden style:

- ✓ **Plant a showy climbing vine.** You may want to plant this vine on one side of the chicken coop and train it to come over to the front of the chicken coop. Vines and greenery soften your chicken coop, and add to its appeal.
- ✓ **Plant a row of flowers along the outside of the chicken pen for color and texture.** A row of marigolds can be planted for their insect-repellent qualities, dynamic accumulator nitrogen fixing qualities, and for colorful seasonal blooms.
- ✓ **Weathervanes create instant character.** Consider mounting a working "Chicken Weathervane" on top of your chicken coop roof. On the Internet, you can purchase weathervanes in wonderful designs that are scaled down in size for small buildings, sheds, and chicken coops.
- ✓ **Plant a pair of blooming tree roses to greet you in front of your chicken coop's front door.** Tree roses come in many varieties, and in two- and three-foot heights.
- ✓ **Whimsical signs add more character.** Yours may announce farm fresh eggs, or the name of your chicken coop. You can find these types of signs, many times on chicken-related websites.
- ✓ **Mirrors can jazz up your coop.** Hang mirrors at a low enough height for your chickens to enjoy near their chicken coop. Mirrors can reflect light and capture the beauty of your garden. Make sure to securely hang a mirror, so the wind can't catch it. Smooth any sharp edges.
- ✓ **Vintage chicken statuary and potted vintage chicken feeders mimic the real life of your chickens around them.** Flea markets carry an abundance of vintage garden statuary. Vintage chicken feeders can easily be transformed into attractive potted containers.

Showing Personality with Rare Chicken Breeds

Nearly 400 poultry breeds are recognized by the American Poultry Association. At some point, you may be interested in raising some of the rare, fancy chicken breeds that are slowly becoming more available today.



These rare chicken breeds aren't for anyone who is new to raising chickens. We wanted to give a sampling of the more unusual breeds that you might see more of in the coming years. These breeds are rare, costly, and can require more overall care.

Many of these breeds are available through small family farms that specialize in rare poultry breeds, and are dedicated to the preservation of these breeds. A few of these family farms that are sources for rare breeds are www.greenfirefarms.com, <http://www.ewecrazyfarms.com>, and www.jordan-farm.com. These rare breeds are available as day-old chicks, and some are sold as fertile hatching eggs. The cost rises significantly for these rare chicken breeds. Some of these breeds have reached cult status among poultry enthusiasts.

Here are some fun options to look into:

- ✓ **Chocolate Orpington:** The Orpington chicken breed was created in England by William Cook in the 1800s. Since this breed's creation, it has become popular and well-loved. In 1994, the late British geneticist Dr. Clive Carefoot discovered the chocolate-colored gene in the breed, and he started breed selecting for this sex-linked chocolate gene, creating the Chocolate Orpington breed. This breed is prized for its shimmery, dark, chocolate-colored feathers. Chocolate Orpingtons have a docile nature. They are known to have infertility problems and are subject to irregular egg laying.

The Chocolate Orpington is considered a bantam breed, yet a large bantam breed. It's extremely rare in the U.S.

- ✓ **Crested Cream Legbar:** The breed originated from a cross of Brown Leghorn, Barred Rock, and some Araucana mixed in. A medium-sized chicken breed that is a good candidate for a free-ranging environment. This breed's standout quality is its unusual sky blue or olive colored eggs. This breed is an auto-sex breed, which means that from day one, you can distinguish a male chick from a female chick. Male chicks have a light spot on their heads and females don't.

- ✔ **Swedish Flower Hens:** A large-sized chicken breed native to Sweden. Just a few decades ago, this chicken breed was close to extinction, and the few remnant flocks were located in three remote Swedish villages. Now it's slowly coming back in numbers. This breed was first imported to the United States in 2010. It hasn't been breed genetically; rather, this breed has evolved over hundreds of years by natural selection. It has many fine characteristics besides its showy plumage with distinct black flecks or flowers on the tips of their feathers. These chickens enjoy human interaction, are good foragers and enjoy free-ranging, are good layers, and are very cold-tolerant. The roosters aren't aggressive toward their caretakers, as roosters often become.
- ✔ **Tolbunt Polish:** A variety of the Polish breed, the Tolbunt Polish may have the most striking feather patterns of any chicken breed. Its feathers are a wild, complex ensemble of brown, black, and white. To top this off, this variety comes in frizzle and non-frizzle varieties. This breed originated in Eastern Germany when it was considered a satellite of the Soviet Union. After the unification of Germany in 1989, the Tolbunt Polish breed was introduced to Western Europe, and in 2000, small numbers were imported to the United States. An absolutely striking and jazzy-looking chicken.



Frizzle is a type of chicken with feathers that curl outward rather than lay flat. Frizzle breeds appear to have fluffy, curly feathers. Frizzle feathers are caused by a mutant gene that can occur in poultry breeds. Frizzle poultry breeds are popular for show purposes.

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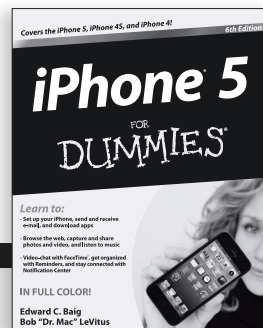
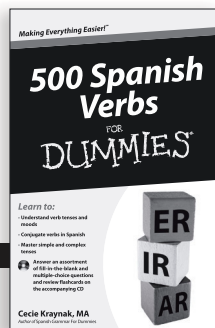
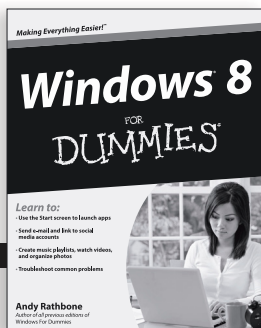
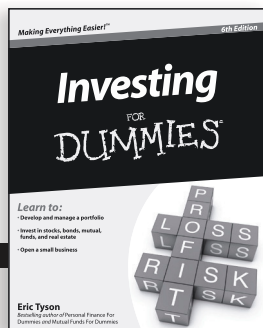
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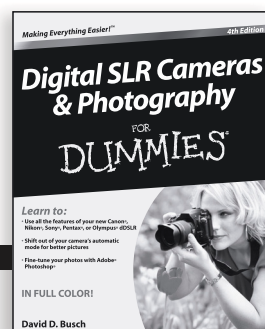
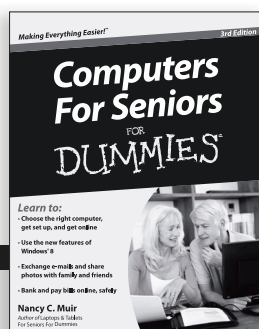
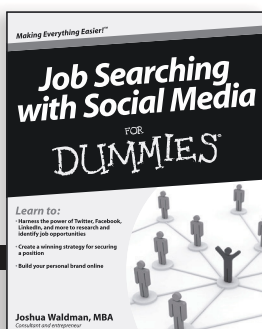
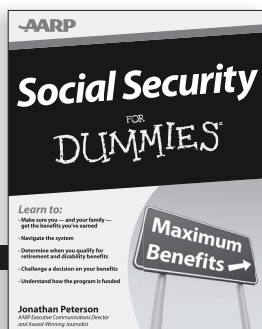
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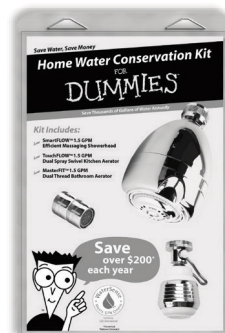
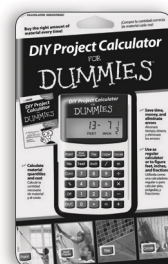
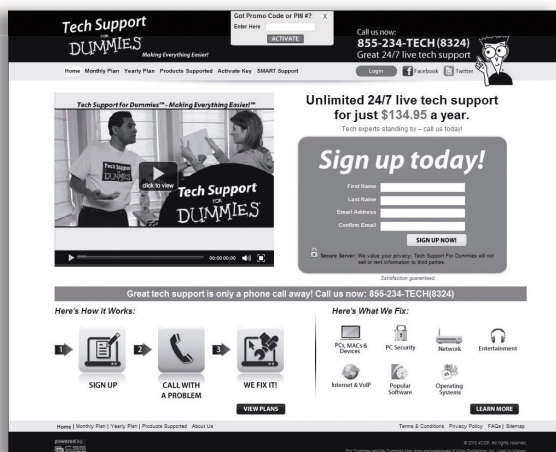
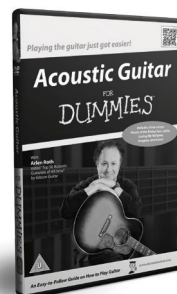
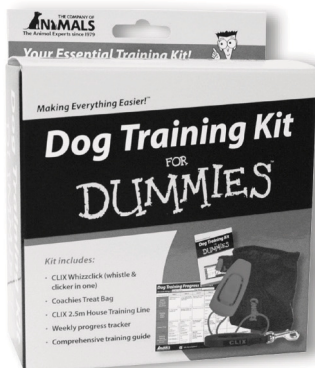


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